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ABNORMAL BLEEDING IN WOMEN AFTER THE AGE OF FIFTY*

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FIVE hundred and ninety-six women over fifty years of age with abnormal vaginal bleeding as one of their complaints were treated as house patients in the Free Hospital for Women during the fifteen year period prior to January 1, 1932. Of this group 303 were found to have some form of genital carcinoma. In the remaining 49.1 per cent (293 cases) no malignancy was detected at the time of the original operative examination. However in six of the cases in this latter group there was subsequent evidence pointing toward a mistake in diagnosis, the presence of carcinoma having apparently been missed. That these six represent all the missed cases of cancer is reasonably certain, since 95 per cent were followed for one and 82 per cent were followed for at least two years.

TABLE 1

CANCER AND BENIGN BLEEDING COMPARED IN PATIENTS OVER FIFTY YEARS OLD (1917-1932)

	First 7½ Yrs.	Second 7½ Yrs.	Total
Carcinoma			
Cervix	81	125	206
Endometrium	22	55	77
Cervix and Endometrium	2	1	3
Vulva	2	4	6
Vagina	0	6	6
Ovary (Causing Bleeding)	4	1	5
	111	192	303
*Non-Malignant	93	200	293*
Total of All Bleeding Cases	204	392	596
Per cent Benign	46%	51%	41.1%
Per cent Malignant	54%	49%	50.9%

*Five granulosa cell tumors included.

Table 1 presents the causes of bleeding in both malignant and uncorrected non-malignant groups. To tabulate accurately and completely the benign causes of bleeding has been impossible because in some instances no cause could be assigned, whereas in others more than one factor might have been responsible. Furthermore, insufficient operative data increased the difficulty of evaluating causes. However we have included in table 2 a representation of the pathological lesions encountered which at least serves to emphasize the differences between the pre- and postmenopausal vaginal bleeding in patients of this age. Of particular interest are the seven cases of postmenopausal flowing due to endometrial dysplasia induced by resumption of endocrine activity in neoplasms of the ovary. These cases have been carefully checked by several pathologists.

TABLE 2

NON-MALIGNANT CAUSES OF UTERINE BLEEDING AFTER AGE 50

Before the Menopause		*After the Menopause*	
Polypi	9	Polypi	62
Fibroids only	6	Cervical	35
Polypi and fibroids	2	Endometrial	21
Cervicitis	6	Myomatous	4
Endometrial dysplasia	29	Mixed	2
Endometrial dysplasia associated with other lesions	22	Polypi and fibroids	4
With fibroids	13	Fibroids only	2
" polypi	3	Cervicitis	72
" adenomyoma	4	Endometrial dysplasia unexplained	1
" ovarian tumors	2	Endometrial dysplasia with ovarian tumors	7
Pelvic inflammation	3	With granulosa cell tumors	5
Pelvic inflammation and fibroids	5	With other tumors	2
Acute endometritis	1	Pelvic inflammation	2
No accountable lesion	15	Cirsoid aneurysm of uterus	1
		Fibroids and pelvic inflammation	1
		No accountable lesion	43
Total	98	Total	195

The operative procedures employed in the 293 cases of benign bleeding are outlined in table 3.

MISSED CASES OF CANCER

Ten of the 293 returned to the Free Hospital for Women for further treatment on account of persistent bleeding and four of these were found to have cancer. There were two other

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cases which we believe died of cancer without returning to this hospital. Therefore it appears that in six cases out of 293, or two per cent, it is fair to say a mistake in diagnosis was made at the original operative examination. Three of the four who returned were treated successfully and now show five-year cures. The remaining one died in spite of close observation

TABLE 3

TREATMENT

Dilatation and curettage	215 — 75%	
Hysterectomy	64 — 23%	(6 were complete hysterectomies)
Excision of cervical polyp	49 — 17%	
Radium	59 — 21%	(Average about 1000 mg. hrs.)
Amputation of Cervix	31 — 11%	
Biopsy of Cervix and other treatment	30 — 11%	
Miscellaneous	4 — 1.5%	
No operation	2 — 0.7%	

over a period of three years. Therefore three died of cancer in spite of the apparent exclusion of that disease at the first examination.

The summaries of the cases in which a mistake in diagnosis is now known or suspected are given below.

No. 6. S. C. Hospital No. 28-39.

Admitted May 4, 1917. Admission diagnosis: carcinoma of the uterus.

Unmarried; nulliparous woman of fifty-eight.

The chief complaint was of lower abdominal distress for five months, a blood-streaked vaginal discharge and a loss of ten lbs., in six months.

P. H. Negative except for removal of a cervical polyp by her L. M. D. five months before. Menopause at forty-nine years.

Examination: Showed stenosis of the vagina with the uterus somewhat enlarged. A biopsy of the cervix was negative.

Operation. May 22, 1917.

Ether examination: Polypoid growth projecting from the cervix. Uterus not outlined. Dilatation and curettage: Cervix dilated, the polyp removed coming away in one piece resembling a cast of the uterus, and followed by the escape of a large amount of pus.

Pathological report:

Chronic cervicitis and cervical polyp. No sign of cancer.

She was discharged in fifteen days symptom-free.

Three months later her L. M. D. reported that she was no better, had much "pain in the bowels" and some vaginal discharge. She died October 16, 1919, two years and five months after operation and her death certificate gave cancer of the uterus and uremia as the cause. There was apparently no autopsy.

Comment: This is not a proved error in diagnosis. The evidence points strongly toward it and we feel it necessary to include this case. It has been the usual practice in the hospital in recent years to perform a hysterectomy in all cases with as suspicious a history as this in spite of a negative biopsy. The fact that we cannot be certain that this patient did not die of carcinoma is evidence to justify this practice.

No. 105. F. S. Hospital No. 40-125 and No. 43-175.

Admitted December 7, 1924. A fifty-five year old housewife para 11.

Complaining of continuous flowing for two months, four to six napkins per day with the occasional passage of large clots and lower abdominal pain.

P. H. She had had a normal menstrual history up to the onset of the P. I.

Examination: Disclosed an abdominal tumor above the umbilicus, and a fibroid mass in the posterior culdesac. She was flowing. Cervix not described.

Operation January 21, 1925.

A large fibroid uterus involved in dense adhesions was removed by a supravaginal hysterectomy.

Pathological report: Multiple fibroids.

Her postoperative course was uneventful and she was discharged on February 11, 1925. At the discharge examination it was noted that there was some fixation of the cervix and induration back of it extending into the left vault. At a follow-up examination on March 20, 1925, there was found to be some induration in both vaults. In February, 1926, she began to flow intermittently and in August, 1926, returned to the outpatient department where a diagnosis of carcinoma of the cervix was made. She was readmitted shortly thereafter and at operation was found to have a squamous cancer of the cervical stump. She was given 4800 mg. hrs. of radium and apparently the treatment was successful as subsequent follow-up reports show her symptom-free to date (1934).

Comment: This case was reported by Pearse as one of the two cases among 1900 supravaginal hysterectomies at this hospital between 1900-1925 in which cancer of the cervix was undiagnosed at the time of operation. (The other patient was only thirty-eight years old.) It illustrates the advisability of routine examination and biopsy of the cervix in all cases within this age group regardless of the gross appearance of the cervix or the presence of other demonstrable pathology.

No. 118. L. E. E. Hospital No. 42-9.

A seventy year old single nullipara admitted on November 18, 1925, complaining of bloody vaginal discharge for two months. She had had a myomectomy at the Waltham Hospital twenty-four years before and twenty-three years before had had a dilatation and curettage, myomectomy, left salpingo-oöphorectomy and hysterorrhaphy at this hospital. The pathological report showed a subserous fibroid and polypoid hypertrophy of the endometrium. Menopause at forty-eight.

P. H. and general P. E. entirely negative. Pelvic examination showed the uterus slightly enlarged.

Operation November 19, 1925.

Ether examination: Showed an enlarged uterus and dilatation and curettage produced no curettings. It was felt that the endometrium was atrophied. Because of the patient's age nothing further was done. Five months later she was admitted to another hospital with signs of peritonitis. She was explored, found to have a pelvic abscess and extensive carcinoma of the uterus with metastases. No biopsy was taken and no autopsy was done after her death in April, 1926.

Comment: Here, as in the first case, we have no definite pathological evidence of carcinoma but must accept the observation of the surgeon who performed the final exploration. This case certainly presented a textbook history of cancer of the endometrium. However there are inevitably a few elderly patients with suspicious lesions who are not explored because the risk of operation is greater than the doubtful presence of a serious lesion warrants, and this case must be included in that group.

No. 148. Mrs. M. R. Hospital No. 44-375.

Admitted July 14, 1927. A sixty-five year old housewife who had had five pregnancies. She came in complaining of bloody vaginal discharge following intercourse on five occasions during the previous five weeks. Menopause at forty-two.

Examination: Rectocele and lacerated cervix.

Operation July 19, 1927.

Dilatation and curettage produced no curettings.

Biopsy of the cervix showed chronic cervicitis on both frozen and paraffin sections.

The cervix was cauterized with the actual cautery.

Follow-up examination on September 2, 1928, showed induration of the cervix. She had had no symptoms but a biopsy was done because of this finding and carcinoma of the cervix was found. Reëxamination of the original tissue removed on July 19, 1927, showed very early squamous carcinoma. She was given 4800 mg. hrs. of radium. She was followed for more than five years and developed no evidence of persistent disease in the cervix. We have lost track of her during the past year.

Comment: In this case the malignant process was in such an early stage that the biopsy tissue was not considered malignant at the time of routine examination. However, the regular pathologist was away at the time on vacation and on his return he checked over the slides accumulated during his absence and made a diagnosis of carcinoma in this case and suggested that the patient be sent for. The readmission was long delayed for reasons which are now obscure. We include this case not as a real mistake in diagnosis but rather as an example of a lapse in the ordinary efficiency of hospital routine which we feel might well occur in any institution. Another lesson to be brought out by this case is the emphasis on the fact that there is a group of borderline cases where the decision of a pathologist experienced in lesions of the cervix is required in making the differential diagnosis of carcinoma and benign diseases.

No. 154. Miss M. B. Hospital No. 54-247.

Admission December 1, 1927. A fifty-five year old single nullipara complaining of daily flowing for seven weeks, the first evidence of flowing since the menopause twelve years before. She had a blood pressure of 205/60.

Operation. December 6, 1927.

Ether examination showed stenosis of the vagina, a small cervix, and an enlarged fundus.

Curettage showed a stenosis in the mid-portion of cervical canal. No grossly remarkable curettings were obtained.

Biopsy was taken from the cervix which was reported negative. She was given 1200 mg. hrs. of radium.

She continued to flow after leaving the hospital and was readmitted January 23, 1928.

A dilatation and curettage was again performed with negative findings and abdominal exploration was done. A small fibroid was found in the lower uterine segment and a supravaginal hysterectomy was done without event.

The pathological examination showed adenocarcinoma of the endometrium, an adenomyoma with adenocarcinoma and an early benign papillary serous cystadenoma of the left ovary.

The patient reports herself well in September, 1934, seven years postoperative.

Comment: This case, like the first, third and last cases in this group, illustrates the necessity for performing a hysterectomy on suspicious historical evidence alone in spite of a negative examination under anesthesia. A complete hysterectomy would have been better treatment.

It happened that in this case the carcinoma apparently started in an adenomyoma and extended to the endometrium. When the specimen was examined there was well advanced carcinoma in the adenomyoma and only very ill defined and early cancer in the overlying endometrium. This doubtless accounted for the negative curettage. In this connection we might mention that there have been at least two other cases, one in 1926 and one in 1930, in which carcinoma developed primarily in areas of adenomyoma buried in the uterine wall, where curettage was ineffective in making the diagnosis.

No. 181. Mrs. M. R. Hospital No. 43-218, No. 46-279, No. 47-111, No. 18255.

Admitted October 11, 1926. A fifty-five year old widow, para V came in complaining of blood-streaked vaginal discharge for six months and a flowing spell of seven days' duration three weeks before. Menopause at fifty-one. She had had four previous operations including two Caesarian sections and a hernia repair. Her blood pressure was 175/120 and she weighed 175 lbs.

Pelvic examination negative.

Operation October 13, 1926.

Ether examination and dilatation and curettage negative. She was discharged October 16, 1926 and readmitted April 29, 1927 for persistent bloody discharge.

Operation May 3, 1927.

Ether examination negative. Dilatation and curettage: Stenosis of cervical canal. A uterine sound inadvertently pierced the fundus. No specimen obtained.

Biopsy of cervix showed chronic cervicitis. She was discharged on May 11, 1927 and readmitted October 4, 1927, on account of staining for two months. Blood pressure 205/170, heart enlarged. This time examination and dilatation and curettage showed the same lack of noteworthy findings but she was given 1000 mg. hrs. of radium in the uterine canal and discharged October 8, 1927. Readmitted for the fourth time July 5, 1928. Blood pressure 168/90.

Operation: Ether examination showed a cervical polyp 0.5 cm. in diameter protruding from the os. Dilatation and curettage produced friable tissue characteristic of cancer. The pathological examination however showed "Necrotic Tissue from the

uterine cavity and a cervical polyp." She was discharged July 16, 1928.

Readmitted October 12, 1928, for the fifth time when she reported profuse bleeding for two weeks and showed a mass rising half way to the umbilicus.

Operation November 21, 1928. Supravaginal hysterectomy, uneventful.

Pathological report showed adenocarcinoma of the uterine wall with metastases in the endocervix. She was given 1200 mg. hrs. of radium for a metastatic lesion in the vagina on July 30, 1929 but died in September, 1929, of carcinoma approximately three years after her original admission.

Comment: In this case both the patient and staff were fully aware of the likelihood of carcinoma but examinations were repeatedly so negative that operation was not performed until it was too late. It is quite natural to be reticent about undertaking even as safe an operation as a hysterectomy when repeated pathological examinations yield no more evidence of a real lesion than the studies of this case. It illustrated the value of careful follow-up of doubtful cases although of course in this case even that failed to provide the patient with an adequate treatment in time to achieve a cure.

DISCUSSION

It is generally admitted that one learns more by mistakes made in the practice of medicine than by successes, that is, if one makes the effort to become aware of one's mistakes. The experience gained through error in these cases has strongly influenced the methods used at the hospital in patients with uterine bleeding. The points to be emphasized are the following:

1. When the clinical evidence points toward the presence of carcinoma of the endometrium a hysterectomy should be performed in spite of negative findings by curettage, particularly when the patient is a nullipara who has passed the menopause.

2. The treatment of elderly patients with uterine bleeding of any type is not complete without biopsy or thorough examination of the cervix to rule out carcinoma even though there may be an obvious lesion elsewhere in the genital tract.

3. About fifty per cent of women who report abnormal bleeding after the age of fifty will prove to have cancer as a cause.

4. Some authorities have advocated doing a complete hysterectomy without curettage in any patient who bleeds after the menopause on the ground that she almost certainly has cancer of the endometrium. Table 2 shows twenty-seven patients with polyps who would have been so operated on unnecessarily if an intra-uterine examination had not been done.

5. We believe the two per cent of error which we made in these 293 cases was small considering the many causes for such bleeding and the factors involved in treating elderly patients sensibly.

SUMMARY

1. Of a consecutive series of 596 patients treated at the Free Hospital for Women with abnormal uterine bleeding as one of their complaints, 293 or slightly less than fifty per cent were found to have benign lesions, at the first operation.

2. Six of these 293 or two per cent, were actually cases of carcinoma which were improperly diagnosed, thereby reducing the percentage of non-malignancy to forty-eight per cent.

3. The diagnostic or operative procedures which, if consistently applied, would exclude such errors in diagnosis are emphasized.

THE DEVELOPMENT IN THE TREATMENT OF PULMONARY TUBERCULOSIS FROM 1696 TO THE PRESENT TIME*

BY GERARDO M. BALBONI, M.D.†

FROM Hippocrates down, many minds for centuries have grappled with the problem of treating pulmonary tuberculosis.

In 1696 Georgius Baglivi in his DePraxi Medica, Book II, Chapter XI, Section 9, proposed the treatment of phthisical pulmonary ulceration by a transverse incision between the ribs reaching to the seat of the lesions. He never performed the operation personally, but saw an able surgeon in Padua treat a severe wound of the lung in this manner, the patient recovering in two months.

Sir Edward Barry, in 1727, in "A Treatise on a Consumption of the Lung" and "A Treatise on Three Different Digestions" advised incision and drainage especially in cases in which the lung is adherent to the parietal pleura. He says, "Such a probable relief can only be expected by opening the breast where the most frequent pain and oppression direct the situation of the ulcer."

Samuel Sharp in 1747, in "A Treatise on the Operation of Surgery," advised incision and drainage in abscesses of the lung and pleura which did not break spontaneously.

Benjamin Bell and M. David advised opening of cavities, as also did Gumprecht.

Pouteau in 1793, in his "Mémoires sur la Phthise Pulmonaire," did likewise.

No advances were made in this century in

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the treatment of the disease. At this time, tuberculous and non-tuberculous suppurative lesions of the lung, bronchi, and pleura were not well differentiated.

It is of interest to know that Ebenezer Gilchrist in 1777, in his book "Uses of Sea Voy-

Georgius Baglivi
BORN IN RAGUSA, 1668
DIED AT THE AGE OF 38

FROM DE PRAXI MEDICA 1696
BOOK II CHAP. XI SEC. 9.

A PHTHISICK ARISING FROM AN ULCER IN THE LUNGS IS COMMONLY BRANDED AS INCURABLE, UPON THE PLEA THAT THE ULCER IS INTERNAL AND OCCULT, AND CANNOT BE CLEANSED LIKE OTHER EXTERNAL ULCERS. BUT WHY DO THEY NOT MAKE IT THEIR BUSINESS TO FIND OUT THE TRUE SITUATION OF THE ULCER, AND MAKE AN INCISION ACCORDINGLY BETWEEN THE RIBS, TO THE END THAT PROPER REMEDIES MAY BE CONVEYED TO IT? FOR MY PART, I KNOW NO REASON WHY THAT SHOULD LIE NEGLECTED. ABOUT SEVEN YEARS AGO, WHEN I WAS AT PADUA, A MAN RECEIVED A WOUND IN THE RIGHT SIDE OF HIS BREAST THAT REACHED TO THE LUNG; AND EMPLOYING AN ABLE SURGEON HAD AN INCISION MADE BETWEEN THE RIBS TO THE LENGTH OF SIX FINGERS BREADTH, IN ORDER TO DISCOVER THE SITUATION OF THE WOUND IN THE LUNG; WHICH WAS PERFECTLY CURED IN TWO MONTHS TIME WITH VULNERARIES APPLY'D WITH TENTS AND WITH SYRINGING. NOW PRACTITIONERS OUGHT TO USE THE SAME PIECE OF DILIGENCE IN CURING A PHTHISICAL ULCER IN THE LUNGS, LEST THE SCROLL OF INCURABLE DISEASES SHOULD GROW TOO LONG TO THE INFINITE DISGRACE OF THE PROFESSION. BELIEVE ME, GENTLEMEN, ASSIDUOUS THOUGHT AND USE IMPROVES AND WHETS THE MIND; BUT SLOTH AND DESPAIR BREAKS ITS EDGE."

Dr. G.M. Balboni's Collections.

FIG. 1.

ages in Medicine," advised patients with pulmonary tuberculosis and other diseases to take a sea voyage. Here we have the first hint of combining rest and fresh air.

In the next century, more life came into the subject, for there were added to the incision, thoracentesis and aspiration.

Early in this century, James Carson, a physiologist of Liverpool, did a number of experiments inducing a pneumothorax in rabbits by the incision method, having demonstrated that rabbits could live with a collapsed lung and that both lungs could be collapsed alternately and the animal live.

About this time, 1819, Laennec invented the stethoscope. Carson made use of it in the examination of patients.

As a result of these experiments and clinical observations, an opportunity presented itself to put the method into practice on two patients with advanced pulmonary tuberculosis. In both cases in the presence of James Carson, an incision was made through the parietal pleura to the lung but no pneumothorax was induced. The patients died; at autopsy it was found that the pleura was adherent. Strange to say, James Carson's work fell into oblivion. Although Canstatt in his treatise on "Pathology and Therapy", 1843, Wunderlich in "Pathology and Therapy", 1856, Kohler in "Special Therapy", 1867, and H. E. Richter in "Principle of Internal Medicine", 1856, mention Carson; they did not consider the method feasible and gave him no consideration. It was only in 1909 that the brilliant experimental work of Carson was brought to light by Daus.

The next worthy experiment was done by Krimer in 1830. He did an exteriorization of a lobe in a dog, tied the pedicle and allowed the lobe to slough. The dog recovered. Krimer wished to do the same operation in a patient with an abscess in the inferior lobe of the left lung, but was dissuaded by his colleague, Walther, and simply made an incision to the pleura, applied caustics, and left the rest to nature. Unexpectedly the patient improved and left the hospital almost well. Six months later, however, he came back with signs of severe disease and died in six weeks. At postmortem, at the site of the original cavity a large cavity existed with parenchymal degeneration, and with many adhesions. A smaller cavity was also found which seemed of recent origin. The right lung was normal.

Krimer's second case was a woman twenty-six years old with an abscess in the inferior lobe. An incision was made between the fifth and sixth ribs exposing the parietal pleura. The patient improved for some time.

Incision, thoracentesis, cauterization with caustic or thermocautery, and aspiration were carried on more or less successfully by Richter, Jaymes, Freteau, Richarand, and others.

Richarand in 1818 operated on a man with a cancerous growth of the chest where he resected two ribs and part of the pleura. The

patient developed an empyema; adhesions were formed between the pericardium and the pleura. The patient was reported out of danger in eighteen days. Prior to this date I have not been able to find any operation embodying rib-resection.

Ramadge in 1839 in his book on "Consumption Curable" speaks of having done thoracentesis in pulmonary tuberculosis with favorable results and he makes a heading "Consumption cured by thoracentesis". It is only fair to say that Ramadge did not do a thoracentesis for collapsing the lung, although he has been repeatedly quoted as a precursor of Forlanini.

In 1840 George Bodington, a village doctor in England, wrote a book "On the Treatment and Cure of Pulmonary Consumption". He urged the free administration of nutritious food and stimulants with exercise in the pure air. It is remarkable that this simple village doctor should have arrived in 1840 at these conclusions. He was severely criticized at the time and he gave up general practice but in 1857, some years later, his treatise was unearthed and ample justice done.

In 1854 a departure in the treatment of tuberculosis and non-tuberculous pulmonary lesions with cavitation was attempted by Horace Green of New York who passed a catheter into the trachea, then into the bronchial tubes and with a syringe injected a solution of silver nitrate. Green claimed some success with the treatment.

INTRAPULMONARY INJECTIONS IN THE TUBERCULOUS LUNG

In 1873 W. Koch reported experiments made since 1869 showing that the lung parenchyma can be changed by punctures and by the injection of iodine in varying strengths, the change taking place without any transformation so that only the immediate vicinity of the puncture canal becomes inflamed and changes directly into connective tissue.

Eugene Fraenkel in 1882 did similar experiments, which were followed by clinical work on patients by Fr. Mosler, Wm. Pepper and others.

The injection of chemical substances was attempted so as to influence the healing of tuberculous and non-tuberculous cavities, and favor the growth of fibroid tissue. The results obtained were not encouraging.

EXTIRPATION OF THE LUNG

About this time, 1881 to 1885, experimental work, extirpation of the lung in dogs, rabbits, cats, guinea pigs, etc., was reported by Block, Th. Gluck, Hans Schmid, W. Koch, Marcus, Biondi, Ziino and Ruggi, showing that a portion or a whole lung could be removed and the animal survive. Biondi and Ziino found that if bilateral lobectomy was done simultaneously, the animal died; but if done alternately the animal survived. These results were put into practice in the resection of the tuberculous lung.

Block was the first to attempt the resection of the tuberculous lobe in a woman. The woman died and Block committed suicide.

Ruggi, Tuffier, Doyen and Lowson have excised a lobe of the tuberculous lung. Ruggi's two cases lived a short time. The cases of the other three operators were reported well months later, but it has been shown that pulmonary tuberculosis is not adapted for resection as the disease is rarely localized.

Rühle in 1883 in a discussion before the German Medical Congress rejects all direct surgical interference in the tuberculous cavity.

It is otherwise in bronchiectasis, tumors, or traumatically injured lobes. Omboni in 1876 and 1879, experimenting on dogs, found that he could extirpate part or a whole lobe without the animals dying. In 1885 he reported the case of a twenty year old lad who shot himself in the chest, the bullet having passed just to the inner side and below the left nipple. The patient was in a very grave condition. An incision was made in the third intercostal space, 1000 cc. extravasated blood evacuated; he pulled out the affected portion of the superior part of the lung, ligated the affected lobe, excised it and allowed the rest to enter the pleural cavity. The patient improved after the operation, but death followed in seven days. Omboni says this was due to lavage of the pleura which caused an abscess plus phenol poisoning from the medications.

Demons in 1886 resected a portion of a herniated lung between the ninth and tenth ribs.

COLLAPSE THERAPY

In order to control the often extensive tuberculous disease, a method was sought which would attack the whole pathology present. Such a treatment was proposed by Forlanini in 1882. He suggested the treatment of pulmonary tuberculosis by an artificial pneumothorax.

Forlanini's proposal in 1882 was practically coincident with Koch's discovery of the tubercle bacillus. Koch's discovery was naturally followed by a widespread attempt to find a specific cure for the disease. Tuberculin was hailed as such. Forlanini tried tuberculin with an indifferent result.

About this time, Dr. Harold C. Ernst, who later became Professor of Bacteriology at the Harvard Medical School, treated certain cases at the Massachusetts General Hospital with tuberculin, which however, proved to be useless and often harmful.

Collapse therapy has had a long period of preparation and development. There were clinical observations, independent of the brilliant experimental work of James Carson, by Stokes in 1837, Czerniki, 1872, Banks, Toussant, 1880, Herard 1881, Weil 1882, Forlanini 1882 and

Bianchi 1884, showing the beneficial effects in certain cases of pulmonary tuberculosis of a spontaneous pneumothorax or hydrothorax in staying the progress of the disease. Caylay in 1885 had treated a case of severe hemoptysis by making an incision in the chest and creating a pneumothorax. The hemorrhage was controlled,

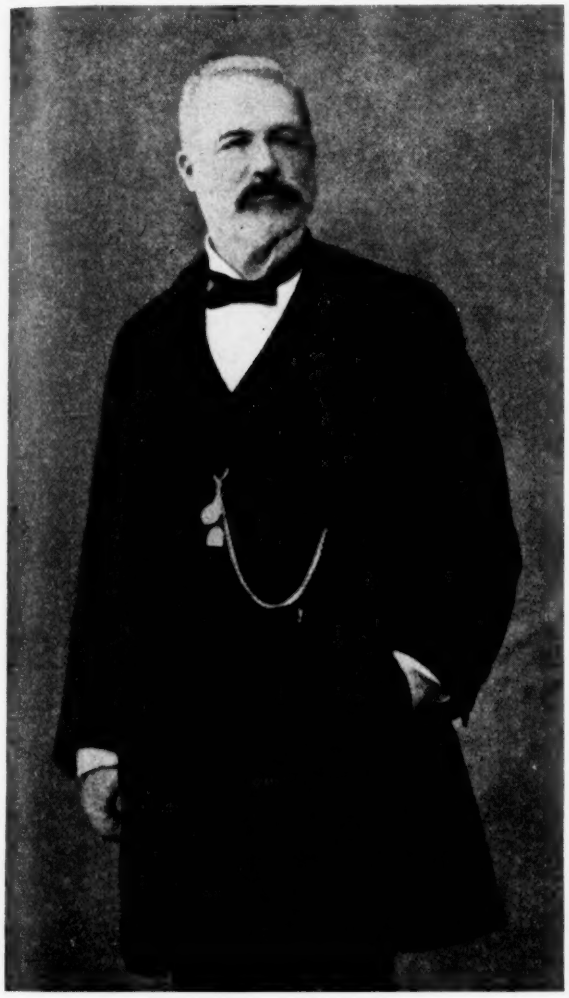

FIG. 2.

CARLO FORLANINI
11-Giugno 1847—25 Maggio 1918

A life long student of Pulmonary Tuberculosis, working silently and persistently for many years developed the present method of treating Pulmonary Tuberculosis by Artificial Pneumothorax, he reported the first clinical cures.—Dr. G. M. Balboni's Collections.

but the patient died from sepsis. Adams in 1887 corroborated this and thought that it could be possible to treat phthisis with artificial pneumothorax.

Spath likewise in 1888 proposed to carry this thought into practice. At the same time Potain was treating recurring pleural effusions by the withdrawal of the fluid and replacing it by sterile air. He pointed out the advantages of maintaining the lung collapsed for some time. Parker in England was treating special cases of empyema by thoracentesis and simultaneous injection of air.

From Forlanini's proposal in 1882 to the time of his first report of the cure of an advanced unilateral case of pulmonary tuberculosis treated by pneumothorax, which was reported at the Sixth Congress of Internal Medicine in Rome in 1895 and published in the *Gazetta Medica di Torino,* 1895, No. 41, he kept quietly at work perfecting his technique.

In a widely read medical journal, the *Munchen. med. Wchnschr.,* No. 15, April 10, 1894, p. 296, there appeared the following résumé: Forlanini of Turin: Versuche mit künstlichem Pneumothorax bei Lungenphthise.

> "Gestützt auf den wiederholt erwähnten günstigen Einfluss der Pleuraergüsse und des Pneumothorax auf den Verlauf der Phthise hatte F. Versuche am Lebenden gemacht und 2 Fälle mit günstigem Erfolg behandelt. Der Pneumothorax kann natürlich nur unilateral angelegt werden. Die Pleura erträgt das Vorhandensein der Luft sehr gut, Reaction oder Reizung oder sonstige schädliche Wirkung wurde nicht beobachtet. Das Oxygen war rascher von ihr resorbirt als der Stickstoff, dasselbe ist letzterem zur Erzeugung des Pneumothorax vorzuziehen. Die Operation muss langsam und allmählich erfolgen, jeden Tag eine kleine Menge N, wenn derselbe resorbirt ist, muss neuer zugeführt werden. Die Resorptionsfähigkeit von seiten der Pleura vermindert sich mit der Zeit. Nach einigen Monaten genügt eine in grossen Zwischenräumen gemachte Lufteinführung."

In 1898, Dr. John Murphy in his Oration on Surgery of the Lung reported five cases treated by pneumothorax. Murphy makes no mention of Caylay or Forlanini. Both Forlanini and Murphy used nitrogen. Murphy used a trochar, injecting very large amounts of nitrogen and creating a voluminous pneumothorax. The injections were repeated at long intervals. Forlanini used the puncture method, injecting small amounts of nitrogen at frequent intervals and creating a gradual collapse. His technique was exact and well worked out, the number of cases was never very large at any one time but they were minutely studied and followed. In his lectures and publications he reported his technique and clinical results. In these lectures, he opposed the Murphy and Brauer technique declaring that it gave only temporary results, and never lasting ones. Forlanini's method is the one universally employed now.

In 1899 Dr. August F. Lemke followed with reports of cases treated with Murphy's technique. After the publication of Loomis's paper

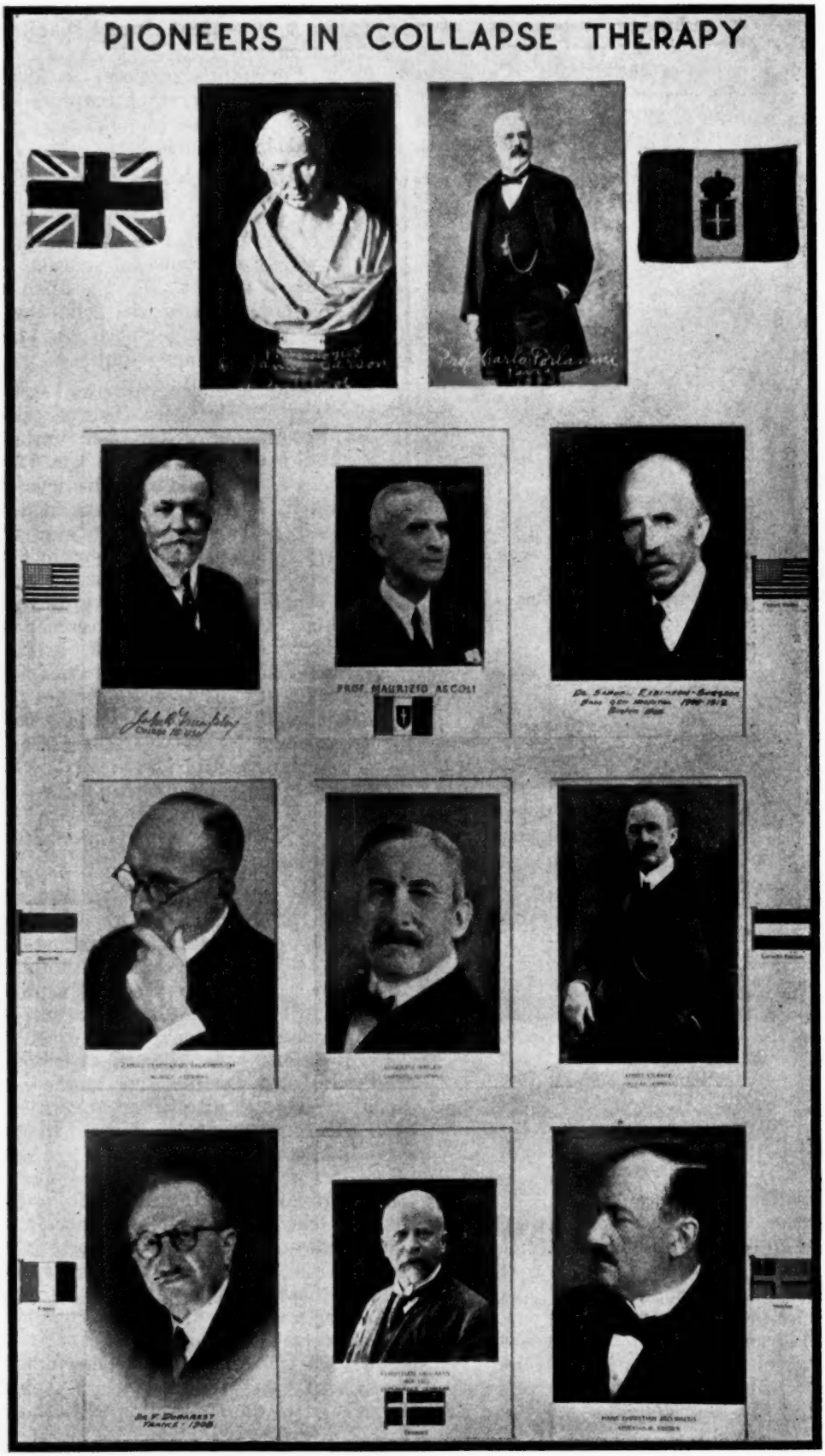

FIG. 3.

THE DEVELOPMENT OF PULMONARY FROM 1696 TO IN THE TREATMENT TUBERCULOSIS THE PRESENT TIME

GEORGIUS BAGLIVI

-1696-
De Praxi Medica
Lib II Chap XI Sec IX.

1727
Sir EDWARD BARRY
A treatise on a consumption of the lungs
A treatise on the three different dyspepsias

1747
SAMUEL SHARP
A treatise on the operation of Surgery

1751
PENNSYLVANIA HOSPITAL

1755
BOERHARVES
Aphorisms

EBENEZER 1777 GILCHRIST
Uses of Sea Voyages in medicine

1778
BENJAMIN BELL
A system of surgery.

1778
M. DAVID
Sur les abscess
Mem. de L'Academie Royal de Chirurgie

1782
HARVARD MEDICAL SCHOOL

1783
CLAUDE POUTEAU
"IGNE - FERRO - SANABAT"
Oevres Posthumes
Sur la Phthysie Pulmonaire

1793
GUMERECHT
De Pulmonum abscessu ope
Chirurgien aprienda Gottingen

1811
MASSACHUSETTS GENERAL HOSPITAL

INCISION - CAUTERIZATION - ASPIRATION - DRAINAGE

1805
RICHTER
Exploratory puncture
Incision-drainage of two pulmonary abscesses adherent to pleura.

1813
JAYMES
Observation de vomique guerie par l'operation de l'empieme Journ. Gen. de Med Vol 48

1813
FRETEAU
Memoire sur une operation dempy eme pratiquee avec succes au côte gauche de la poitrine dans le lieu delection Journ Gen. de Med xv 47

1819
R.T.H. LAENNEC STETHOSCOPE

1818
M Le CHEVALIER RICHERAND
Resection of two ribs and part of pleura for cancerous growth.
Recovery

1830
G. KRIMER
Sur quelques essais tendant a obtenier la guerison de certain cas de phthisie pulmonaire par des moyens chirurgicaux.

First experiment on dog
Exteriorization of the lobe
ligating the pedicle
allowing the lobe to slough
RECOVERY.

1819-1822
JAMES CARSON-PHYSIOLOGIST
Essays Physological and Practical
Experiments on Rabbits with Pneumothorax Application in Man.
Unsuccessfull. (Incision method)

1846
DR. MORTON - Demonstration of Ether.
MASSACHUSETTS GENERAL HOSPITAL

CLAESSENS 1839
Vomique survenue a la suite d'une peri-pneumonie aigue. Guerison par un'ouverture pratiquée a un tumeur formee entre les troisieme et quatrieme fausses côtes gauche.

1885
MARTEL
Traitement Chirurgical des Cavernes Pulmonaires

JOHN HASTING 1845 ROBERT STORERS
A case of Tuberculous excavation of the left lung treated by perforation of the cavity through the walls of the chest
1845 London Med. Gaz. Vol. I.

1887
ADAMS
Surgical treatment of pulmonary cavities. Lancet

HORACE GREEN 1854
On the employment of injection into the Tracheal tube and into tuberculous cavities of the Lung.
Am. Med. Monthly Vol III 1854

M.E. BONCHUT 1854
Memoire sur les fistules pulmonaires. Gaz. Med. Paris

FRANCOIS EXUPERE ARJO. 1877
Historique du Traitement Chirurgical des Cavernes Pulmonaires. These de Paris 1877

J.W. RUNENBERG 1887
In regard to the operative treatment of Lung Diseases Devt Arc ki Med.

W. KOCH 1882
Aspiration incision drainage in two cases.

GODLEE J.R. 1887
Surgical treatment of pulmonary Cavities. Lancet

REPRESENTITIVE BOOKS OF THE PERIOD ON DISEASES OF THE LUNG.

WILLIAM STOKES. Dublin 1837
A treatise on the diagnosis and treatment of diseases of the Lung.

1839
FRANCIS HOPKINS RAMADGE
Consumption Curable

1840
GEORGE BODINGTON
Treatment and cure of Pulmonary — Consumption

JOHN HASTINGS London 1845
Pulmonary Consumption Successfully treated by Naptha.
An appendix - showing the utility of puncturing Tuberculous cavities as an adjuvant in the cure of phthsis

1859
HERMAN BREHMER
First successfull Sanatorium in Germany

1880
FENGER & HOLLISTER
Report of a cure with pneumatomy
A.M.A. Jour.

ISEDORE BRICHETEAU PARIS 1851
Traite Sur Les Maladies Chroniques de L'Appareil Respiratoire

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Pathology and treatment of Pulmonary Tuberculosis.

RICHARD PAYNE COTTON London 1858
On Consumption its Nature Symptoms and Treatment.

HERMAN E. RICHTER LEIPSIC. 1856
Grundiss der inneren Klinik
Lungen - Schwendsucht

1862
Louis PASTEUR
Bacteriology

1884
EDWARD L. TRUDEAU
SANATORIUM - SARANAC LAKE

1867
JOSEPH LISTER
Antiseptic Surgery

1873 - 1889
EXPERIMENTAL and CLINICAL - INTRA-PULMONARY - INJECTION IN THE TUBERCULOUS LUNG OF CHEMICAL SUBSTANCES
BY W.KOCH - FR. MOSLER - Wm. PEPPER - A.E. FRAENKEL - MARAGLIANO - PORCHER - SOKOLOWSKI - SMITH - FURLANINI - FERNET

1891
SHARON SANATORIUM

1882
ROBERT KOCH
Tubercle Bacilli

1885 - De CERENVILLE of LAUSANNE
De l'Intervention operatoire dans les Maladies du poumon Rev. Med. Suisse Romande

H. QUINCKE - 1889
Zur operative Behandlung der Lungentuberkulos
Berlin Med. Woch.

1885
M. TRUC
Chirurgie Du Poumon
These de Lyon.

EARLY RIB RESECTION
J.A. ESTLANDER — 1879
Resection of the ribs in chronic empyema.
Nordisk - Med. Arch. XI No. 21
Reports six cases and describes operation.

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Zur chirurgischen Behandlung der Lungentuberkulos
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W. CAYLAY
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First case of Adv. Pulm. T.B. Cured by Art. Pns.

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X RAY

STWART TIDEY
Compression of chest by bandages

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JOHN B. MURPHY
Oration on Lung Surgery
Five cases treated by Art. Pns. "Trechar Method."

1898
WALKER SCHELL
A new use of MURPHY'S method of immobilization of Lung.

1881 - 1895
EXTIRPATION OF THE LUNG — EXPERIMENTAL and CLINICAL APPLICATION
TH. GLUCK - MARCUS - BLOCK - SCHMID - RUGGI - ZIINO - BIONDI - OMBONI - DEMONS - LOWSON - TUFFIER - DOYEN - CECCHERELLI

1899-1901
A.F. LEMKE
Pulmonary Tuberculosis Treated by Nitrogen inj.

1900
HENRY P. LORMIS

1906
L. BRAUER
Der Therapeutische Pneumothorax

CLINICAL OBSERVATION ON THE BENEFICIAL EFFECTS OF A
SPONTANEOUS PNEUMOTHORAX and HYDROTHORAX in CASES of PULMONARY TUBERCULOSIS

Wm STOKES 1837
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C. FORLANINI 1882
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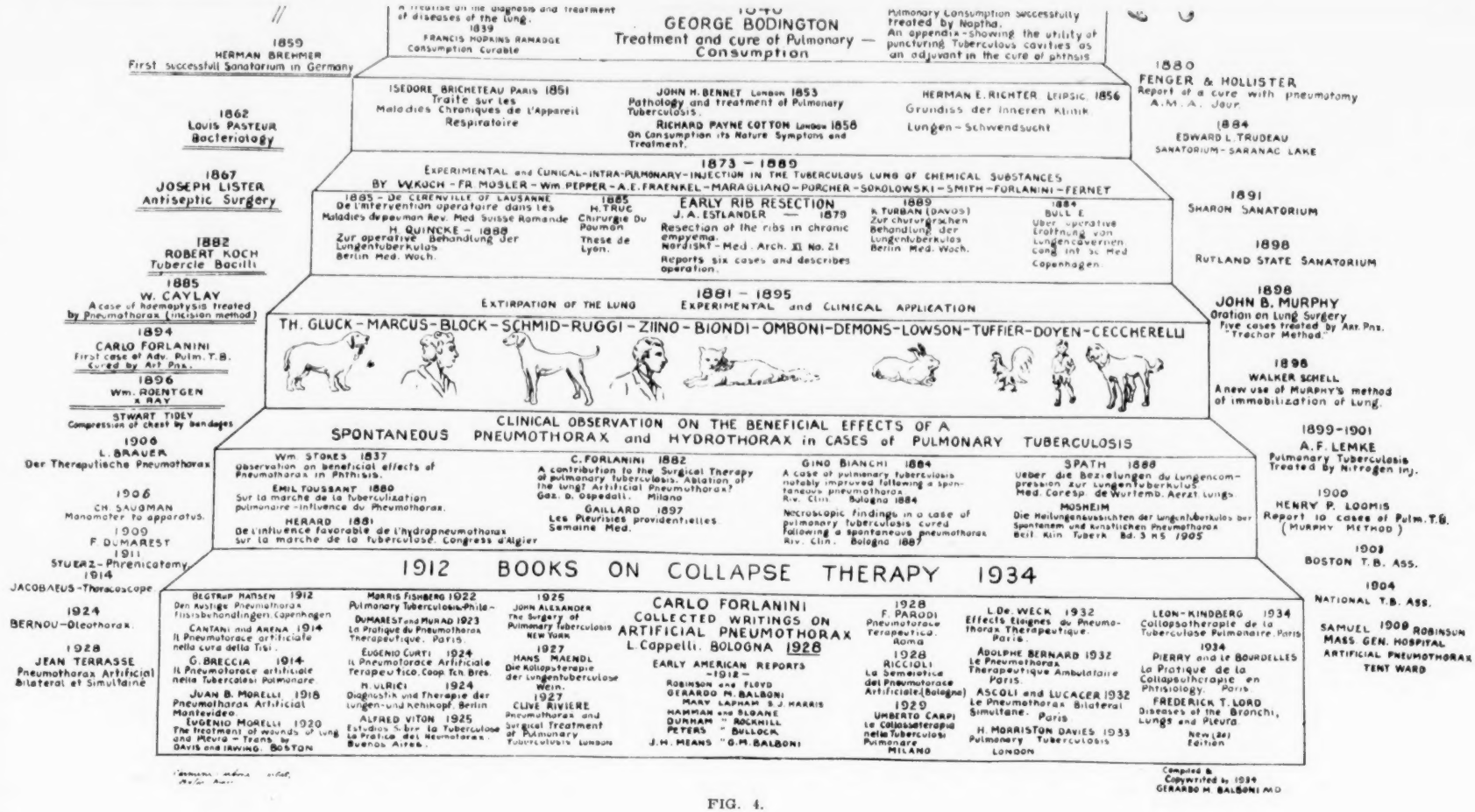
Med. Coresp. de Wurtemb. Aerzt Lunge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CH. SAUGMAN
Manometer to apparatus.
1909
F. DUMAREST
1911
STUERZ - Phrenicatomy
1914
JACOBAEUS - Thoracoscope
1924
BERNOU - Oleothorax.
1928
JEAN TERRASSE
Pneumothorax Artificial Bilateral et Simultané
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EMIL TOUSSAINT 1880
Sur la marche de la Tuberculization pulmonaire - influence du Pneumothorax.
HERARD 1881
De L'influence favorable de L'hydropneumothorax sur la marche de la tuberculose. Congress d'Algier
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A contribution to the Surgical Therapy of pulmonary tuberculosis. Ablation of the lung? Artificial Pneumothorax?
Gaz. D. Ospedali. Milano
GAILLARD 1897
Les Pleurisies providentielles
Semaine Med.
GINO BIANCHI 1884
A case of pulmonary tuberculosis notably improved following a spontaneous pneumothorax
Riv. Clin. Bologna 1884
Necroscopic findings in a case of pulmonary tuberculosis cured following a spontaneous pneumothorax
Riv. Clin. Bologna 1887
SPATH 1888
Ueber die Beziehungen du Lungencompression zur Lungentuberkulos
Med. Coresp. de Wurtemb. Aerzt Lungs
MOSHEIM
Die Heilungenswbsichten der Lungentuberkulos bei Spontanem und Kunstlichen Pneumothorax
Beit. Klin Tuberk. Bd. 3 H5 1905
1899-1901
A.F. LEMKE
Pulmonary Tuberculosis Treated By Nitrogen Inj.
1900
HENRY P. LOOMIS
Report 10 cases of Pulm. T.B. (MURPHY METHOD)
1903
BOSTON T.B. ASS.
1904
NATIONAL T.B. ASS.
1909
SAMUEL ROBINSUN
MASS GEN. HOSPITAL
ARTIFICIAL PNEUMOTHORAX
TENT WARD
1912 BOOKS ON COLLAPSE THERAPY 1934
BEGTRUP HANSEN 1912
Den Kustige Pneumothorax Tisirsbehandlingen. Copenhagen
CANTANI and ARENA 1914
Il Pneumotorace artificiale nella cure della Tisi.
G. BRECCIA 1914
Il Pneumotorace artificiale nella Tubercolosi Polmonare
JUAN B. MORELLI 1918
Pneumothorax Artificial Montevideo.
EUGENIO MORELLI 1920
The treatment of wounds of lung and Pleura - Trans. by DAVIS and IRVING. BOSTON
MORRIS FISHBERG 1922
Pulmonary Tuberculosis Phila -
DUMAREST and MURAD 1923
La Pratique du Pneumothorax Therapeutique. Paris.
EUGENIO CURTI 1924
Il Pneumotorace Artificiale Terapeutico. Coop. Tch. Bres.
H. ULRICI 1924
Diagnostik und Therapie der Lungen-und hehlkopf. Berlin
ALFRED VITON 1925
Estudios Sobre la Tuberculose La Pratica del Neumotorax. Buenos Aires.
1925
JOHN ALEXANDER
The Surgery of Pulmonary Tuberculosis NEW YORK
1927
HANS MAENDL
Die Kollapstherapie der Lungentuberculose Wein.
1927
CLIVE RIVIERE
Pneumothorax and Surgical Treatment of Pulmonary Tuberculosis London
CARLO FORLANINI
COLLECTED WRITINGS ON
ARTIFICIAL PNEUMOTHORAX
L. Cappelli. BOLOGNA 1928
EARLY AMERICAN REPORTS
-1912-
ROBINSON and FLOYD
GERARDO M. BALBONI
MARY LAPHAM S.J. HARRIS
HAMMAN and SLOANE
DURHAM " ROCKHILL
PETERS " BULLOCK
J.H. MEANS " G.M. BALBONI
1928
F. PARODI
Pneumotorace Terapeutico. Roma
1928
RICCIOLI
La Semeiotica del Pneumotorace Artificiale (Bologna)
1929
UMBERTO CARPI
La Collassoterapia nella Tuberculosi Polmonare
MILANO
L. De. WECK 1932
Effects Elognes du Pneumothorax Therapeutique.
Paris.
ADOLPHE BERNARD 1932
Le Pneumothorax Therapeutique Ambulatoire
Paris.
ASCOLI and LUCACER 1932
Le Pneumothorax Bilateral Simultane. Paris
H. MORRISTON DAVIES 1933
Pulmonary Tuberculosis
LONDON
LEON-KINDBERG 1934
Collapsotherapie de la Tuberculose Pulmonaire. Paris
1934
PIERRY and Le BOURDELLES
La Pratique de la Collapsotherapie en Phtisiology. Paris
FREDERICK T. LORD
Diseases of the Bronchi, Lungs and Pleura.
New (2d) Edition
Compiled & Copyrighted by 1934
GERARDO M. BALBONI M.D.

FIG. 4.

UNIV. OF MICH.

in 1900, and after the death of Lemke, whose last article was published in 1901, the treatment fell into disuse in spite of the fact that they had reported the care of many cases. From this we may infer that the successes were few. Otherwise the Murphy method would not have been abandoned.

In 1906 Ludolf Brauer of Marburg took up pneumothorax with great energy through his own work and through the experimental and clinical work of his assistants (Mosheim, Graetz, Shingu, Bruns). He published the first case in February, 1906.

While the principle of Forlanini was to create a pneumothorax slowly and reinject at frequent intervals, Brauer in the beginning followed the technique of Murphy who created a voluminous pnenumothorax at once and reinsufflated only when the air was almost wholly absorbed. On these points Brauer later followed Forlanini's method (Brauer and Spengler). Brauer on the strength of animal experimentation rejected Forlanini's technique which consisted of creating a pneumothorax by punctures. According to Brauer one cannot prevent injuring the lung and there is the added risk of injecting air into a blood vessel and thereby causing an air embolism. He created his pneumothorax by making an incision between the ribs through the parietal pleura. He made a detailed report and study of cases of advanced pulmonary tuberculosis treated by the Murphy trochar method and by his own incision method. In the same year L. Spengler of Davos and Adolph Schmidt followed using Brauer's incision method. The experimental work on the effect of pneumothorax carried out in Sauerbruch's clinic was also of great importance.

The x-ray, which Roentgen discovered in 1896, has become indispensable in collapse therapy. A further aid to lung collapse is Stuerz's phrenicotomy and its modifications, either alone or in conjunction with pneumothorax. Jacobaeus's operation for severing pleural adhesions has also widened the field of pneumothorax therapy.

In 1902 Christian Saugman took up the treatment in a severe case of phthisis without result. In 1904 he again made an attempt which he had to abandon on account of severe pain and shock. With Forlanini's other announcement in 1906 he again took up the treatment, being successful in a number of cases. He added a manometer to the apparatus which gives the technique a great degree of safety. He has published many valuable contributions on collapse therapy. Thue, Mjoen and Holmboe in Norway, Delprat in Holland, and Lillingston in England took pneumothorax up later.

In 1909 F. Dumarest took up the work in France having learned the technique from Forlanini himself. He also made many valuable contributions to pneumothorax therapy. Dumarest says that Forlanini sent his first manuscript to a French medical journal, and was refused publication.

Dr. Samuel Robinson, a surgeon of the Massachusetts General Hospital interested in thoracic surgery, was well acquainted with Murphy's work and that of Brauer of Marburg, in whose clinic he spent some time. He had an opportunity to see and study the patients in this clinic. He was also familiar with Forlanini's work. He started pneumothorax in 1909 in a tent ward at the Massachusetts General Hospital* in collaboration with Dr. Cleaveland Floyd.

Dr. Robinson and I had been greatly encouraged to continue the work by the active coöperation of Dr. Joseph H. Pratt, a pioneer in the rest treatment of pulmonary tuberculosis, and referred many of his cases for pneumothorax treatment.

At that time, 1910, it was difficult to obtain cases for pneumothorax treatment. Having learned from Dr. Robinson the exact technique then used, I treated eight cases from my private practice. These eight cases were included in the report of twenty-one cases published by Robinson and Floyd in 1912. The eight cases were the basis for my interest in pneumothorax therapy.

Since 1912 refills have been given to ambulatory cases in the Out Patient and Emergency Ward of the Massachusetts General Hospital. Recently a separate Pneumothorax Clinic has been established for ambulatory cases.

The conception, practical application and clinical study of artificial pneumothorax embraced almost thirty years. The vast amount of work done in that time has widened the field of the application of collapse therapy beyond the hope of its early workers. This has been accomplished by the persevering efforts of Forlanini and his pupils, by Roentgen with the x-ray, by the important work of Brauer and his colleagues as well as by that of Dumarest in France and Saugman in Denmark. In 1912 at the International Tuberculosis Congress held in Rome, Prof. Maurizio Ascoli reported the first cases of pulmonary tuberculosis treated bilaterally with pneumothorax. Important advances were made by Jacobaeus with his method of pleuropneumolysis, by Stuerz with his phrenicectomy, and by Bernou's oleothorax.

It is well to remember the following from Christian Saugman:

> "The technique of the treatment by pneumothorax makes great demands on the knowledge and skill of the physician. For

*Money for the maintenance of the tent ward was given by Dr. Richard C. Cabot, Mr. Charles D. Sias and Mrs. Coburn.

Editor's footnote:
Ambulatory pneumothorax clinics have been organized at the Boston City Hospital and the Beth Israel Hospital. The Pneumothorax Clinic at the Massachusetts General Hospital was established by the author from money collected by him.

the success of the treatment it is imperative that all details be carried out. The physician has new problems daily which must be solved and which give a variety to the work that is otherwise lacking in the treatment of pulmonary tuberculosis. They lend to collapse therapy, which offers the possibility of excellent results for many otherwise hopeless patients, a certain charm and make the treatment one of the most worthwhile tasks of the lung physician. Only one who at all times controls the technique with all its details will get from it complete satisfaction, therapeutically as well as scientifically."

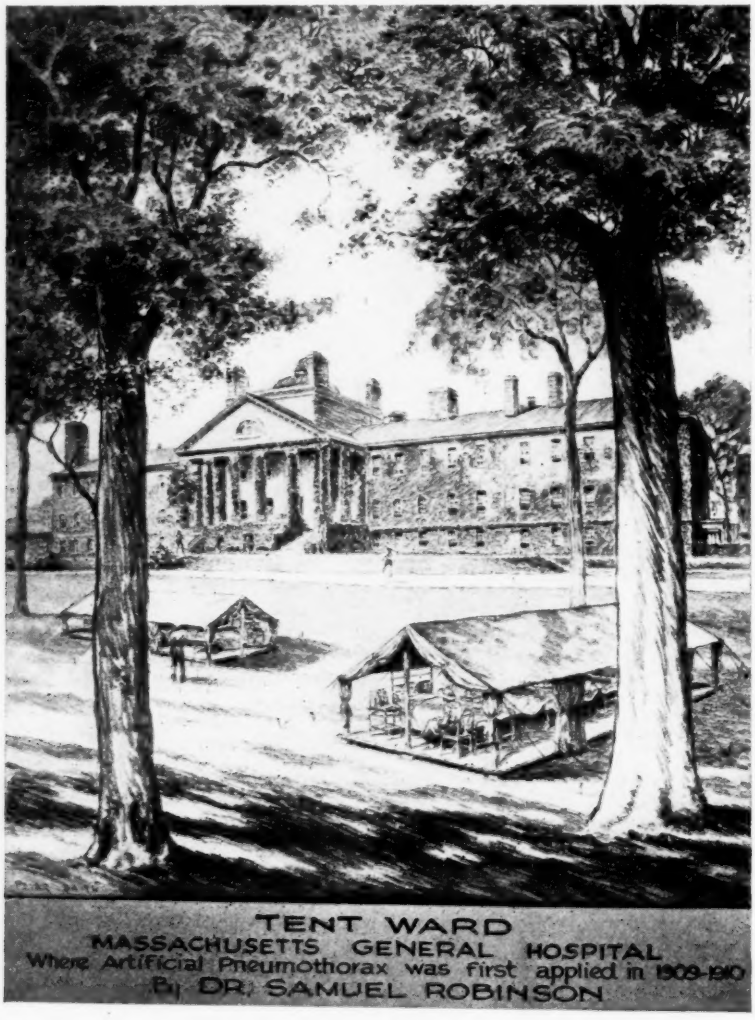
TENT WARD
MASSACHUSETTS GENERAL HOSPITAL
Where Artificial Pneumothorax was first applied in 1909-1910
By DR. SAMUEL ROBINSON

FIG. 5.

FIRST ATTEMPT AT EXTRAPLEURAL COLLAPSE

In Germany, Quincke in 1888 and Carl Spengler in 1890 emphasized the purposefulness of the retraction of the thorax and tried to support this idea by an operation. Turban in 1899 aided the shrinking tendency of the lung by rib resection. Stewart Tidey in 1896 directed attention to the treatment of consumption by restricting or minimizing the lung expansion by bandaging the affected side of the chest. Intrapleural and extrapleural collapse have replaced pneumotomy and pneumonectomy in tuberculosis for obvious reasons.

The successes in artificial pneumothorax have encouraged the surgeon to radical operative procedure beyond that which Quincke and Turban attempted. Dumarest rightly says, "C'est, quant, à nous, par le pneumothorax que nous sommes arrivés à la thoracoplastique."

REFERENCES

1. Adams, F. E.: The surgical treatment of pulmonary cavities. Lancet. 1: 799, 1887.
2. Albert, E.: Ueber Lugenchirurgie. Wien. med. Presse. 25: 852, 1884.
3. Bacchini, Luigi: Contribution to the surgical treatment of pulmonary cavities. Gaz. Med., Roma. P. 121, 1883.
4. Balboni, Gerardo M.: The treatment of pulmonary tuberculosis by artificial pneumothorax according to the method of Forlanini. With a report of twenty-one cases. Boston M. & S. J. 167: 755 (Nov. 28); 804 (Dec. 5); 844 (Dec. 12); 882 (Dec. 19); and 928 (Dec. 26) 1912.

Idem: The development of modern artificial pneumothorax. 171: 147 (July 23) 1914.
Idem: Forlanini's artificial pneumothorax. A study. 171: 697 (Nov. 5) and 955 (Dec. 17) 1914.
5. Biondi, D.: Extirpation of the lung. Giorn. Int. Sc. Med. 4: 759, 1882. Idem: 5: 270 and 417, 1883.
6. Block, H.: Lung resection and its indication with demonstration of animal experimentations. Verhandl. d. deutsch. path. Gesellsch. P. 77, 1882.
7. Idem: Letter from Berlin. Boston M. & S. J. 108: 261, 1883. (By Dr. G. L. Walton.)
8. Bouchut, M. E.: Mémoire sur les fistules pulmonaires cutanées. Gaz. méd. de Paris. 9: 123, 144, 158, 172, 1854.
9. Brauer, L.: Die Behandlung der einseitigen Lugenphthisis mit kunstlichem Pneumothorax. Munchen. med. Wchnschr. 53[1]: 338, 1906.
10. Brauer, L., and Spengler, L.: Erfahrungen und Überlegungen zur Lungenkollapstherapie. Beitr. z. Klin. d. Tuberk. 19: 1, 1911.
11. Bull, E.: On the operative treatment of lung cavities. Cong. Int. Sc. Med., Copenhagen. P. 10, 1884.
12. Claessens: Vomique survenue à la suite d'une péripneumonie aiguë. Guérison par une ouverture pratiquée à une tumeur formée entre les troisième et quatrième fausses côté du côté gauche. Ann. Soc. de méd. de Gând. 5: 170, 1839.
13. Daus, S.: Historisches und Kritisches über kunstlichen Pneumothorax bei Lungenschwindsucht. Therap. d. Gegenw. U. F. 11: 221, 1909.
14. David, M.: Sur les abscess. Mem. de l'Acad. Royale. Second Partie. 10: 24, 1778.
15. de Cérenville: De l'intervention operatoire dans les maladies du poumon. Rev. Med. de Suisse Romande. P. 441, 1885.
16. Delprat, C. C.: Het Vejlefjord Sanatorium en iets over de Behandlung met Kunstmatigen Pneumothorax. Nederl. Tijdschr. v. Geneesk. 2A: 882, 1908.
17. Demons, A.: Résection d'une portion d'un poumon et extirpation d'un rein pratiquées avec succès sur le même sujet. Bull. et mém. Soc. de chir. de Par. 12: 450, 1886.
18. Doyen: Chirurgie du Poumon. Cong. Francaise de Chir. P. 104, 1895.
19. Dumarest, M. F.: Du pneumothorax chirurgical dans le traitement de la phtisie pulmonaire. Bull. méd. 23: 123, 1909.
20. Fernet: Des injections intra-pleurales antiseptiques dans les pleurésies infectieuses. La Semana Méd. 9: 243, 1889.
21. Forlanini, C.: History of a case treated with injections into the lung parenchyma. Morgagni, Milano. 31: 325, 1889.
22. Fraenkel, E.: Experiments on the influence of injections of medicinal substances into the lung tissue. Deutsche med. Wchnschr. 8: 51, 1882.
23. Gluck, T.: Experiments on lung extirpation. Berl. klin. Wchnschr. P. 645, 1881.
24. Holmboe: Behandling av Lungetuberkulose ved hjaeep av. Kunstig Pneumothorax. 20: 805, 1908.
25. Koch, W.: History of the surgical treatment of lung cavities. Berl. klin. Wchnschr. 16: 194, 1876.
26. Koch, W.: Lung surgery. Deutsche med. Wchnschr. 8: 440, 1882.
27. Krimer, G.: Sur quelques essais tendant à obtenir la guérison des certains cas de phtisie pulmonaire par les moyens chirurgicaux. J. Comp. de Sc. Med. 1836.
28. Krönlein: In regard to lung surgery. Berl. klin. Wchnschr. 21: 128, 1884.
29. Lillingston, C.: The treatment of phthisis and haemoptysis by artificial pneumothorax. Lancet. 2: 145, 1911.
30. Loomis, Henry P.: Some personal observations of the effect of intra-pleural injections of nitrogen gas in tuberculosis. Med. Record. 57: 876, 1900.
31. Lowson, D.: A case of pneumonectomy. Brit. M. J. 1: 1152, 1893.
32. Maragliano, E.: Caverna polmonare; iniezioni endotoraciche. Gaz. med. ital., prov. venete, Padova. 26: 81, 1883.
33. Marcus, M. S.: Recherches relatives aux conséquences de l'extirpation expérimentale des poumons. Gaz. méd. de Par. 3: 695, 1881.
34. Martel, E.: Contribution à l'étude du traitement chirurgicale. Rev. Bibliog. Un. de Sc. Med. P. 65, 1883.
35. Mjoen: Kunstig Pneumothorax ved Lungetuberkulose. Tidsskruft für den norske Lage forening. 1908-23.
36. Mosler, F.: Ueber lokale Behandlung von Lungenkavernen. Berl. klin. Wchnschr. 10: 509, 1873.
37. Omboni, V.: Left pneumectomy. (Firearm lesion with hemorrhage.) Ann. Univ. Med. Chir. P. 32, 1885.
38. Parker, R. W.: Treatment of special cases of empyema by thoracentesis and simultaneous injection of purified air. Lancet. 1: 689, 1882.
39. Pepper, W.: On the local treatment of pulmonary cavities by injections through the chest-wall. Am. J. M. Sc. 68: 313, 1874.
40. Porcher, F. P., and Fuyer: Exploratory puncture of a vomica in the lung with a view to its cure by injecting a solution of carbolic acid. Virginia Med. Monthly. 9: 333, 1882-83.
41. Potain: Des injections intra-pleurales d'air stérilisé dans le traitement des épanchments pleuraux consécutifs, au pneumothorax. Bull. méd. 2: 555, 1888.
42. Richarand: Nosographie Chir. 3rd Edition. 4: 194, 1812.
43. Richter: Bemerk und Lungensucht in den gelcherten. Gottingen Anzeigen, Stuck. 28: 448, 1805.
44. Ruggi: La tecnica della pneumectomia nell 'uomo. Zannichelli, Bologna. 1885.
45. Rühle: Ueber Tuberkulose. Verhandl. d. cong. f. innere med. 2: 4, 1883.
46. Saugman: The treatment of pulmonary tuberculosis by the formation of artificial pneumothorax. Ugesk. f. Laeger. 14: 739, 973, 987, 1907.
47. Schmidt, A.: Intrapleurale Injectionen zu therapeutischen Zwecken. Verhandl. des Congress Int. Med. 23: 380, 1906.
48. Schmid, Hans: Experimentelle Studien über partielle Lungenresection. Berl. klin. Wchnschr. P. 757, 1881.
49. Smith, R. S.: Five cases illustrating the action of intrapulmonary injections. Bristol med. Chir. 3: 164, 1885.
50. Sokolowski: Du traitement local des cavernes pulmonaires. Arch. Gén. de Méd. 2: 107, 1883.
51. Thue: Eehandling af Lugetuberkulos. Med. Kunstig Pneumothorax. Norsk Magazin f. Laeger. No. 12, 1908.
52. Tuffier: De la résection du sommet du poumon. La Semana Méd. 2: 202, 1891.
53. Waring, J. J.: The history of artificial pneumothorax in America. Part I. Journal Outdoor Life. 30: No. 9, 305, 1933.
54. Ziino, G.: Sull 'estirpazione parziale del polmone. Gior. d. sc. med. P. 695, 1882.

ARTHRITIS AND TONSILLAR INFECTION

BY H. ARCHIBALD NISSEN, M.D.†

RECOGNITION of a problem is the first step toward its solution. Intelligent consideration of any subject assumes that the same interpretation be given to terminology by both writer and reader. In this instance three terms frequently used must be defined briefly. "Tonsils" when used refers to lymphoid tissue, other than nodes, above the seventh cervical vertebra. A "focus of infection" is understood to be a locus containing bacteria or inflammatory tissue with or without the constant presence of bacteria ascertainable. "Systemic infection" may indicate general body involvement, or the involvement of one or more of the various body systems. The point at issue is: Can the lymphoid tissue present above the seventh cervical vertebra be a focus, or transmitting agent, for the production of infection or disease in one or more systems composing the body structure, and more particularly in the skeletal structure? Is there immediate, delayed, or constant systemic response to acute, subacute or chronic inflammatory change in lymphoid tissue? Is such response, if proved, caused by direct transmission or by the production of an allergic reaction in other body tissue? For many years a large group of men, especially in the United States, have considered focal infection the chief etiological factor in arthritis. In order to learn more about the association between tonsillar infection and joint disorders, the author studied a group of nearly five hundred arthritic patients from this angle.*

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*The majority of these patients were followed at the Robert B. Brigham Hospital in Boston from 1914 to January, 1934. The coöperation of the Staff of the hospital enabled the author to study the records and check on the patients in making this study.

TONSILLAR INFECTION

There are four types of tonsillar and nasopharyngeal reactions which should be recognized by the general practitioner as well as the specialist as indicating local infection.

1. There is the acutely infected tonsil, with or without abscess formation. This is easily recognized.
2. There is the red hypertrophied chronic tonsil with or without symptoms. This also is easily recognized and is obviously infected. However the individual possessing such tonsils is often completely free from any subjective symptoms and is unaware of any relationship, subjective or objective, between his throat and joint reaction if present. (There is constant absorption from such infected areas though the toxic or bacterial activity may be mild.)
3. The third reaction is not easily recognized, and plays a most important part in connection with systemic response to its toxic irritants. In this tonsil the anterior pillar, particularly the portion overlying the upper half, is a purplish red color, as are the edges of the soft palate, and at times the uvula. If this throat is observed closely from time to time, the appearance will be seen to change from the dull, purplish red to a much more brilliant inflammatory shade, but with the underlying purplish tinge remaining, and becoming more pronounced. This is the type of infection in which a sore throat is rarely mentioned, unless to it is added exogenous infection. Exogenous infection means an infection entering the body from without; endogenous infection, one which is carried in the body. The difference between exogenous and endogenous infection is in the duration of the changed appearance of the throat. In endogenous reaction, with or without joint response, the tonsillar picture subsides quickly and returns to its former chronic appearance in a day or so; the joint reaction, if recognized, is also of short duration. Exogenous reaction is actually a subacute tonsillitis, or an acute exogenous infection superimposed upon a previously chronically infected, or functionally destroyed tonsil.

   This type of tonsil may have retrotonsillar adhesions, abscesses, or, what is more likely, under the congested discolored anterior pillar and soft palate, a single large abscessed region, or numerous small pockets, which may or may not open to the surface. This is concealed in a cursory view of the throat, but if the anterior pillar and soft palate are separated, will be seen. This type of tonsil is of particular importance because it may be a transmitter of direct infection, or may produce allergic reaction on the part of the body without subjective sore throat. (This throat differs from the well known "smoker's throat", which shows obvious pharyngeal rather than tonsillar irritation.) It will be recognized however only if the patient is watched day by day for some weeks, and sometimes for months. It will then become evident that this discoloration in the tissue subsides, disappears, and reappears; but at all times there remains the underlying picture of chronic infection. Without repeated examination it often will be overlooked or misinterpreted, though it may be an actual factor in the production or maintenance of an arthritic syndrome.
4. The fourth type of infectious lymphoid tissue in the throat is the nasopharyngeal cavity itself, which is very often a greater source of infection than is realized. If it is not examined repeatedly, as in the third type of throat, it may be considered as normal or of no importance. It is due to this type of tissue that certain tonsillectomized patients continue to have their former complaints of sore throat, colds, etc., with the same joint and systemic reaction. This lymphoid tissue may well be considered as small atypical tonsils, subject to exactly the same infectious changes as the tonsils, and probably responsible for much the same joint reaction. Tonsils when infected may be compared to lobar pneumonia, nasopharyngeal lymphoid tissue, other than the tonsils, when infected to bronchopneumonia, or many little pneumonias. Cultures from the nasopharynx during infection show staphylococcus more frequently than they do any other type of bacteria. On the other hand, true tonsillar infection cultures show mixed bacteria, most frequently streptococci. Cultures taken at different stages of an acute tonsillitis may show a complete cycle of the streptococcal bacteria beginning with a non-hemolytic streptococcus and winding up with the same organism. Whether the staphylococcus is a pleomorphological bacterium has not been proved satisfactorily, but the direct effect of the nasopharyngeal infection, most frequently staphylococcic, in chronic arthritis has not been given sufficient consideration.

ARTHRITIC AND SYSTEMIC REACTION FOLLOWING NASOPHARYNGEAL TISSUE INFECTION

Recognition of infected nasopharyngeal lymphoid tissue must be followed by recognition of its influence upon the rest of the body. Clinical observation and years of practice prove to the satisfaction of most clinicians what science has failed to demonstrate as yet, that is, that infection in the nasopharyngeal structures has direct bearing on changes in the respiratory tract, the gastrointestinal tract, the genitourinary tract, the skeletal structure and the homeo-

stasis of the body. Whether the first attack of tonsillitis ruins the functional activity of that tonsil, with or without retention of infection, is in a way beside the point, because other lymphoid tissue in the throat may be the transmitter of direct infection or the sensitizing agent for allergic reaction in other body systems.

Infection directly transmitted follows the lymphatic course forming depots in the chest with hilus gland involvement, which in turn if inadequate in their function produce local or diffuse distribution of infectious material. At any stage a few, or many, toxic elements, or bacteria, may enter the blood stream producing a definite bacteremia of minor or major degree. Also at times a localized abscess may be formed which, without proof of bacteremia, may serve as a source of allergic response on the part of the body. Such response may be in the form of well-recognized skin reaction, urticaria or hives, angioneurotic edema, hay fever, or possibly joint reaction of a type which may be termed hay fever in a joint. Allergic symptoms manifest themselves in two ways: first, spasm of smooth or involuntary muscles and secondly, vascular disturbance, probably increased capillary permeability.[1] The accepted work of psychoanalysts compels one to stop and think, because so many of the so-called functional disorders may be psychopathological in origin. So that allergy as such may have actually as an origin a psychopathological basis which when established will respond to correct treatment but the underlying psychopathology remain unchanged.

It is imperative therefore that intensive individual study of each patient be made in order to recognize infected lymphoid tissue and its possible association with a coincidental arthritis. Even more important however than the recognition of these two conditions is the decision as to operation, for, or against, and when. Personal experience may convince one that infection in the nasopharyngeal tissue has a definite association with the onset or exacerbations of arthritis, but further than that, experience must teach in which instance this focus of infection should be removed or in which it should not; at what time in each patient's course operation may prove of definite benefit, and at what time it may prove disastrous. The mere recognition of nasopharyngeal infection and the fact that it is definitely an extra load which has precipitated its host into an arthritic syndrome caused a recurrence of a previously quiescent disorder, or pushed the patient over the border line into a downhill course, is not of itself sufficient to warrant operative interference. Intelligent and successful choice of time for operation, if operation is to be performed, depends upon study of each individual patient, and should include:

1. A history that is complete in every possible detail.
2. A complete physical examination as well as repeated local examinations.
3. Careful study of the blood and urine, and radiographic examinations of the chest, gastrointestinal and genitourinary systems as well as of the joints themselves.
   Such studies are essential to establish the actual condition of the patient and the differential diagnoses.
4. Special attention to a history of marked tissue change. Great loss of weight combined with joint symptoms must be considered as a definitely poor prognostic sign, especially in an individual in whom all forms of nutritional upbuilding have failed and in such an individual operation should not be undertaken unless there is a demand for emergency operative interference.

STATISTICAL FINDINGS OF A STUDY OF FIVE HUNDRED ARTHRITICS FROM THE POINT OF VIEW OF NASOPHARYNGEAL INFECTION

In a previous paper, a division of a group of arthritic patients by the life course each followed was made[2]. It was found that one of four distinct courses was followed by all chronic arthritics. In the first, termed Life Course A, the patient with the onset of arthritis dropped to a lower level of activity; remained there for a time, then climbed back toward his former level and stayed at this level through the greater part of his remaining life. The second course, B, showed a life curve made up of definite periods of remission and relapse, and as the years passed the trend was gradually downwards with lengthening and more frequent periods of relapse and shorter and fewer periods of remission. Course C showed a tremendous drop in the life line over a variable period of time from the expected one hundred per cent of functional activity to a fifty or twenty-five per cent level, because of extensive joint destruction and crippling; and the remaining life spent at this low level, often for years. The last, Course D, showed a course which progressed steadily downward to death without appreciable remission, regardless of treatment.

The first outstanding fact observed after listing these five hundred patients for statistical purposes was that in only ten per cent had tonsillectomy been performed prior to the onset of arthritic symptoms. This fact came as a distinct surprise to the author. It certainly does not corroborate the accusation frequently heard that a "slaughter of the innocents" (meaning wholesale tonsillectomy) is the rule.

Is this ratio of ten per cent of tonsillectomized patients to ninety per cent with retained tonsils merely a normal incidence? Does it indicate on the part of the average physician lack of recognition of chronic nasopharyngeal infection, particularly of the third and fourth types de-

scribed? Or does it indicate that the physician was given no opportunity to decide whether the nasopharynx was a source of infection? In any case, the mere fact that in a group of nearly five hundred arthritic patients, ninety per cent *had* retained their tonsils intact up to the time of the arthritic onset (and this group included patients fairly equally distributed in each decade of life) arouses one's interest in the speculation as to whether the arthritic picture would have been the same had the tonsils been removed in early childhood before the first attack of acute infectious tonsillitis occurred. Might such procedure have avoided future tonsillitis, so lessening extra loads on other lymphoid tissue in the nasopharynx? Might it later in life have eliminated the possibility of tonsils being examined and considered as innocuous though in reality they were a definite source of infection missed by the examining physician because of lack of symptoms or complaints on the patient's part and lack of repeated observation of the nasopharynx on his own part?

In the group whose tonsils remained intact at the onset of joint symptoms the most noteworthy fact was the varying association in the individuals following the four Life Courses between tonsillar infection and joint reaction. In Course B, made up largely of patients with the degenerative type of joint changes, with recurrent remissions and relapses, there was definite association between the two conditions. Repeated clinical and radiographic examinations show that there is a large number of this type of patient, irrespective of age, whose bones have shown for years spur formation, thickening of capsule, etc., but without symptomatic recognition or actual functional impairment. Such patients at times show a systemic response or reaction to upper respiratory and tracheobronchitic infections, in the form of joint stiffness, swelling, pain or discomfort. Prior to the initial response on the part of these degenerative joints to tonsillar infection, the patient may have, and probably has, experienced innumerable similar infections but without recognized systemic reaction. This reaction, when noted, probably indicates extraneous infection, exogenous in origin, different from any former infection in the body of that patient, for which ample antigen had been heretofore manufactured. With a single such irritant in an individual with degenerative tissue change the nasopharyngeal infection and the joint reaction are likely to subside more or less simultaneously. If however there is a history of marked fatigue, exhaustion, loss of sleep, and worry in addition to the exogenous infection, the individual may react to his own infection, previously held in control or check, and may develop a more prolonged joint reaction lasting as a rule six weeks to three months.

In Course C there was the most marked incidence of patients giving a history of repeated sore throats, colds, or tonsillitis throughout life prior to the onset of arthritis; or a history of the onset of arthritis occurring during such nasopharyngeal infections, and of the recurrence of attacks, or acute exacerbations with succeeding tonsillar attacks. There was also in this group the most frequent story of gradual subsidence of acute nasopharyngeal infection in later life after the patient had reached his low C-level of crippling, though in 59 per cent the tonsils were still intact at the time this study was made, or at the patient's death. In the 41 per cent of Course C patients whose tonsils were removed at some time following the onset of arthritis, a large per cent gave the story of a precipitant downhill course after operation. In short, the most definite association between tonsillar infection and joint reaction occurred in the group of arthritics whose arthritis was the most severe and disabling. The question arises whether this group of individuals was inherently of poorer tissue and less able to carry the extra load of infection, or whether the load itself was greater than that handled by those whose arthritis responded more readily to treatment?

TREATMENT OF NASOPHARYNGEAL INFECTION IN THE ARTHRITIC

The *combined* efforts of the physician following the patient and the otolaryngologist are needed in the wise decision as to operation, the optimal time for operation, and the best form of local treatment when operation is contraindicated. If however the services of an otolaryngologist are not available, for the time being the physician in charge must be prepared to administer palliative treatment of infected lymphoid tissue until the patient can be placed under the care of the specialist. For many reasons it may be found that a fairly large number of arthritic patients with infected lymphoid tissue will have to be taken care of by their own physicians. For the help of such patients the following aids are suggested to the general practitioner:

Local Treatment

For the chronic type of lymphoid tissue irritation or infection without subjective symptoms:

1. Application of Methylene Blue Powder, U.S.P. Medicinal No. 9, to the posterior pharyngeal wall once a day. A small amount on an applicator is sufficient. The patient's mouth should be held open: he should breathe without swallowing until the methylene blue is absorbed, and is in contact with the posterior nasopharyngeal wall and with the posterior portion of the nares of the nose. Five minutes after installation the patient may be allowed to

swallow or expectorate what methylene blue in liquid may remain.

This application should be made daily the first week during an acute flare-up of nasopharnygeal inflammation; three times the second week; twice the third; and once a week thereafter. This procedure in itself will produce a shrinkage of inflamed engorged lymphoid tissue and at times appear to be more than a local, superficial germicide. Obviously it is absorbed, because the urine will usually be blue or bluish green following local administration of methylene blue.

2. If there is nasal congestion with inflamed turbinates it is wise to use in addition one of the recognized vasoconstrictor preparations.* It may be applied on a small pledget of cotton on the end of an applicator, or the pledget may be introduced directly with nasal forceps, using a nasal speculum so it can be placed in the nose well back toward the nasopharynx and extending as far upward against the septum as possible. If such pledgets, saturated with a vasoconstrictor solution, are introduced into each nostril and allowed to remain for five minutes, marked increase in the ease of breathing and comfort will follow. This treatment should be repeated frequently enough, and for a long enough period of time, to ensure continued free and easy breathing. If there is sufficient congestion to impair breathing through the nose, short temporary periods of relief are not sufficient. Obstruction of air passages resulting in constant blowing of the nose, or sniffling, with consequent irritation of the membranes is likely to spread the infection to the Eustachian canals involving the middle ears, or to the sinuses and ethmoid cells. It also means that the patient will breathe through his mouth if nose breathing is impossible. This produces, particularly during sleep, a dryness of the posterior pharyngeal wall, definitely impairing or lessening its normal function. In other words, whatever treatment is used to maintain free nasal breathing must be repeated as often, and continued as long, as is indicated subjectively and objectively. For this reason it is essential that the patient be taught to apply as much of the treatment to himself as he can, having been taught first to recognize the signs of infected lymphoid tissue in his nose and throat.

These procedures are applicable to all four types of infected tissue described, but particularly to types three and four, because these are the ones with which the patient is least likely to complain of a sore throat.

*Neo-Synephrin Hydrochloride Emulsion has proved most satisfactory if the directions outlined above are followed.

General Treatment

For general treatment in connection with the foregoing local treatment, vaccines, antigens and bacteriophage have a definite beneficial action in certain cases in spite of all that has been written and discussed in regard to contraindications. In those people with degenerative joint changes, who complain of recurrent attacks of stiffness, occasional swelling, redness and pain about a joint, culture from the nose and throat or from sputum, if raised, will frequently show the predominating organism to be streptococcus, staphylococcus or a mixture in the more chronic type of throat infection and with hypertrophied lymphoid tissue. Subcutaneous injections of staphylococcus bacteriophage, one cc. repeated in forty-eight hours, once a week may often prove of definite value. In others, antigens and vaccines (stock or autogenous) injected subcutaneously every fourth day are beneficial. The dose should be small enough not to produce a localized red area of inflammation at the site of injection or generalized systemic reaction. The so-called hypertrophic arthritic, or the one whom I prefer to term one of the degenerative tissue type individuals, without definite destruction but rather with inflamed or tender soft tissue surrounding a joint, will respond best and derive the greatest benefit from such treatment. Many times, instead of going through the expected six weeks' to three months' course of disability, the condition will clear up in a shorter time. In other words, the hypertrophic patient with his flare-ups, which really constitute a large part of the general practitioner's arthritic experience, is not exhibiting the acute exacerbation of a genuine arthritis; but rather a soft tissue reaction, either toxemic in origin, or allergic, each directly responsive to blood or lymph borne infection in terms of bacteria invading the structures in or about joint tissue.

For the patient s comfort and for lessening stiffness of joints due to soft tissue congestion or constriction about joints, Empirin Compound, which is made of 3½ grains of aspirin, 2½ grains of phenacetin, and ½ grain of caffein, seems to be tolerated the most readily, and if given in sufficient dosage will lessen the stiffness and pain with very measurable objective evidence of salicylic action, that is, increased warmth locally to the part involved in a flare-up and increased local perspiration over it. It would be interesting to determine how many people in the United States depend upon one of the many salicylic preparations, alone or in combination with other chemicals, in order to get started for the day, when at the time of awaking in the morning they have stiffness, swelling

and some pain due to degenerative tissue changes. It is a definite clinical observation that these patients with degenerative tissue changes and no evidence of destructive arthritis derive distinct relief from vaccines, antigens, bacteriophages, more than from any other one product of the salicylic preparations.

In recommending this last medication it is taken for granted that the physician appreciates the fact that if any gastric discomfort follows the ingestion of salicylic acid products, half a teaspoonful of soda bicarbonate in water taken at the same time, will offset this disagreeable reaction without changing the therapeutic value and action of the salicylic acid. It is also stressed that prescribing a dosage sufficient to give the patient comfort and relief is recommended primarily for patients who are ambulatory and whose disease is presumably in a quiescent stage. The same dosage given a patient in an acute stage of genuine arthritis who should be bedridden might be definitely detrimental should the comfort and relief from pain resultant from large doses of salicylic acid preparations be the means of keeping him ambulatory, thus damaging inflamed joints which should be at rest.

This local and general treatment are of course coincidental. It should be repeated that treatment of infection in tonsillar tissue by the clinician should be only temporary pending consultation with, and advice from, the otolaryngologist. If distance makes such consultation necessarily a single one, or purely for operative interference, it is most desirable that the man in charge of the case accompany the patient and explain his own studies and case history to the specialist: or if this is impossible, send with the patient such detailed information. While the practitioner is dependent on the specialist for advice on local conditions, the specialist is equally dependent on the clinician for complete information about the patient, information vital to wise decision, and impossible to secure in a single visit, or even in several visits.

CONCLUSION

Even without recognized association between upper respiratory tract infection and joint infection, such association may be present. Proof of this depends on intensive study of the individual to determine three factors:

1. Recognition of obvious and concealed chronic infection in the nasopharyngeal tissue. The two most common are unmistakable, the acutely infected tonsil and the red hypertrophied chronic tonsil. The third is possibly of greater importance, and is often missed unless the patient is seen frequently, and the appearance, subsidence and reappearance of signs of infected lymphoid tissue are noted. On examination of this type of throat a purplish red discoloration is seen on the anterior tonsillar pillar, along the edges of the soft palate and at times in the uvula. These local changes are constant to a certain degree (the dusky discoloration being present at all times), but show varying reaction to exogenous and endogenous infection. During such reactions the tonsillar poles become prominent and more inflamed, but this is noted only if the upper part of the tonsil is exposed. The duration of the reaction is short if the excitor is endogenous: long if of exogenous origin.
2. Recognition of joint and other systemic infection. This depends on thorough physical, laboratory and radiographic examinations.
3. Determination of association between local and joint and systemic infection by extensive and prolonged study of each individual patient.

Man apparently follows roughly four natural Life Courses from birth to death. Study of a large group of patients with various chronic diseases, including arthritis, will show them to follow four life courses similar to the natural courses but more exaggerated in their variations. The author has called these Courses A, B, C and D and described each. The ability to estimate the future Life Course of one's patient will prove of great value in determining the best procedure to adopt when nasopharyngeal infection is present. Generally speaking, if a patient presents himself with combined nasopharyngeal and arthritic infection, having had no operation performed previously on the tonsils, the author believes the lesser of two evils, —i.e., removal of tonsils as a possible focus of infection with the risk of disaster; or leaving them intact as a constant source of infection via drainage with equal possibility of disaster, —is *removal*. Success or failure following such removal depends on the *time* chosen for operation. If good chance (or good judgment) makes the time tonsillectomy is performed opportune, the result will be beneficial to the patient. This is the point on which attention should be focused, and more certainty as to this crucial time gained. Roughly speaking, in an adult, one must expect about a year to elapse before judgment of good or bad results of operation can be made. In an arthritic it should be performed when both the nasopharynx and the joints are as quiescent as possible, when the patient's resistance and general health have been raised to the optimal level; and only if the patient shows periods of such quiescence and meas-

urable improvement. In an arthritic who appears never to reach even a short period of quiescence of joint disease, or of general improvement, in one who is markedly undernourished and who cannot be made to gain weight, tonsillectomy is never indicated. Attempt to control nasopharyngeal infection by various remedies in such instances is described. This non-operative policy is also indicated in any individual who is believed to be following Life Course D, as any operative interference on one in this group appears to be disastrous.

Wise decision between operation and conservative treatment of nasopharyngeal infection depends wholly on the individual patient in question. Without a thorough knowledge of him and of his psychology and physiology the outcome is pure chance, and science will continue without proof of the relationship between tonsillar infection and rheumatic disorders. For the present one must be contented with continued careful observation of the operated patient and be guided by clinical observation until it is substantiated by scientific corroboration.

REFERENCES

1. Feinberg, Samuel M.: Allergy in General Practice. Philadelphia: Lea & Febiger. $4.50.
2. Nissen, H. Archibald, and Spencer, K. A.: Arthritis and systemic involvement as exemplified in a group of dead arthritics. New Eng. J. Med. 210: 147 (Jan. 18) 1934.
Nissen, H. Archibald: Chronic arthritis and its treatment. New Eng. J. Med. 210: 1109 (May 24) 1934.

VERMONT STATE MEDICAL SOCIETY

OBSTETRICAL COMPLICATIONS*

BY JOHN M. BERGLAND, M.D.†

THE topic assigned to me was "The Complications of Pregnancy". You will grant that that is a pretty large subject for a tired man and for a tired audience as well; I will, therefore, talk only on one or two of the actual complications of pregnancy, and these are included in the group known as the toxemias of pregnancy. The term toxemia covers a multitude of sins and many of the authorities disagree as to its proper classification. It is, practically speaking, one of our most important subjects when we consider that some 15,000 young women die every year in the United States alone,

ULTIMATE DIAGNOSIS, TOXEMIAS OF PREGNANCY

Type	No. of Cases	Per Cent
Vomiting	30*	7.35
Eclampsia	35*	8.58
Preëclampsia	50	12.25
Low Reserve Kidney	148	36.27
Nephritis	137	33.58
Unclassified	8	1.96
	408	99.99

*Estimated on basis of percentage of other cases traced.

FIGURE 1.

of obstetrical complications and accidents. The second commonest causes of death are the toxemias of pregnancy, and realizing that most of my audience are general practitioners who have to take obstetrical cases as a matter of routine, I believe we can spend a short time profitably on this topic.

*Read at the Annual Meeting of the Vermont State Medical Society, Burlington, October 4, 1934.

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This table (figure 1) shows the incidence of the various types of toxemia as classified in the textbook of the late Whitridge Williams. We realize that the classification is open to argument and criticism, but so far we have seen no reason to change it. A great many writers do not believe that there is such a pathological entity as a low reserve kidney; but we feel that the condition exists and should have a distinct place in our classification. The topics I am going to speak about to-day are those of low reserve kidney, preëclampsia, and eclampsia, and I shall emphasize particularly our treatment of these conditions.

MATERNAL AND FOETAL MORTALITY IN THE TOXEMIAS OF PREGNANCY

	Maternal	Foetal Incl. Abortions
Vomiting	2.00	54.55
Low Reserve Kidney	0.00	9.46
Preëclampsia	0.00	17.66
Eclampsia	11.02	39.37
Nephritis*	42.53	25.49

*Deaths from nephritis within 10 years of delivery.

FIGURE 2.

Figure 2 shows the maternal and fetal mortality in the various toxemias. You see that nephritic toxemia leads the list, but the death rate is high because of the number of patients that die some years after they are delivered. We follow up our patients who have suffered with toxemia through a special dispensary clinic, and we are able in most cases to insure their attendance at the clinic through the efforts of the social service department.

Now let me say a word about low reserve kid-

ney. This is seen during the last third of pregnancy and the patients have few subjective symptoms. They may have slight headache, a certain amount of dimness of vision, and occasionally mild edema of the extremities. There is a moderate rise of systolic and diastolic blood pressure and a small amount of albumen in the urine. This condition is illustrated by the following chart (figure 3). The patient is usually

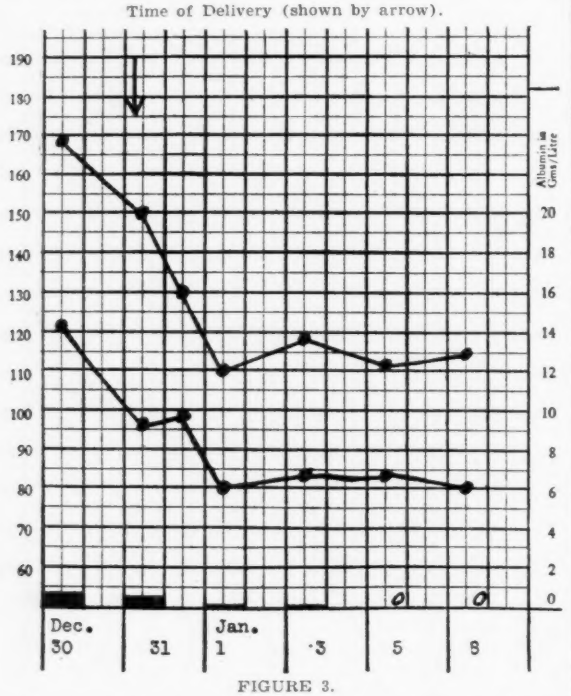

FIGURE 3.

The upper line refers to systolic and the lower to diastolic blood pressure.

put to bed and watched carefully. She is given a low protein, salt free diet and a fair amount of water. Under this simple treatment, the urine increases in quantity, the albumen diminishes, and the blood pressure falls. If the patient is near term, induction of labor is frequently done and following the delivery of the child, as shown in the accompanying chart by the arrow, the symptoms disappear, the blood pressure returns to normal, and the patient leaves the Clinic in excellent condition. It is well, however, to watch her for several months after the termination of her labor, before drawing a final conclusion as to the outcome of the case. We feel that such a patient can usually have one or more other pregnancies without showing any signs of permanent kidney damage.

The next chart (figure 4) shows the condition that we define as preëclampsia.

Here we have the patient with a large quantity of albumen in her urine and high systolic and diastolic pressures. She usually has severe headache, dimness of vision, and a considerable degree of edema of the extremities. Often there is marked epigastric pain and this is usually considered a particularly dangerous symptom. The treatment is, of course, mainly prophylactic, and it is by careful prenatal care that this condition is discovered early and frequently prevented. If the symptoms and signs do arise, the patient is usually hospitalized, put to bed, put on a low protein, salt-free diet, given a copious saline purge every morning, and the quantity and character of her urine are carefully watched. As a rule the blood chemistry shows little or no change.

The main object of the treatment is to prevent the patient from having a convulsion, and if she does not show definite improvement, or if

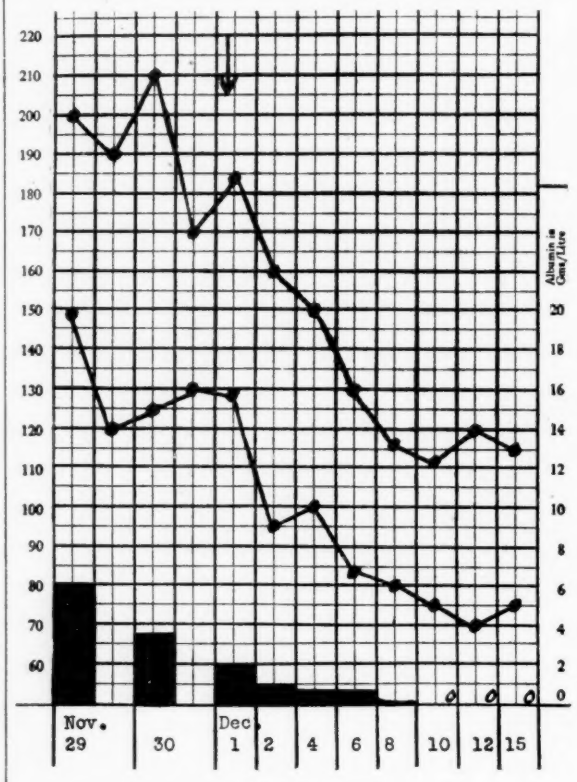

FIGURE 4.

she continues to get worse, prompt delivery is effected frequently by Caesarean section, because we believe that the ordinary induction of labor takes so long that the patient may have a number of convulsions before delivery. We think that even one convulsion increases the patient's danger materially, for I have seen three patients die during a first convulsion. If the symptoms disappear following the delivery and no convulsions occur, the blood pressure and the urine usually become normal within two weeks, although occasionally it may be a much longer time before these signs disappear. The patient should again be seen at intervals for a number of months before the final outcome is certain and often before a proper classification can be made. If convulsions occur, we then

classify the patient as one having eclampsia, and figure 5 will show the blood pressure findings in such a case, the arrow indicating the time of delivery. Here we have the most serious complication that the pregnant woman can meet and this is proved by the high death rate, no matter what treatment is used.

FIGURE 5.

The next table (figure 6), shows the result of the treatment and we believe that we can demonstrate that at least our maternal death rate has fallen somewhat. One may divide eclampsia roughly into two types, the severe and the mild,

RESULTS IN 384 CASES OF ECLAMPSIA ACCORDING TO TYPE OF TREATMENT

	Total Cases	Gross Maternal Mortality %
1. Radical	110	22.8
2. Transition	71	16.9
3. Conservative	76	14.6
4. Stroganoff	127	11.0

FIGURE 6.

and we have found Eden's classification of great help. He states that a patient can be classified as having severe eclampsia if she presents two of the following signs and symptoms: (1) prolonged coma; (2) pulse rate above 120; (3) temperature of 103° or higher; (4) blood pressure above 200 systolic; (5) more than ten convulsions; (6) ten grams or more of albumen in the urine; and (7) an absence of generalized edema. In the severe cases, according to this classification, the maternal death rate has been high, whereas in the mild cases most of the patients recover no matter what treatment is used.

Let me say a word with regard to the so-called radical treatment, which was in general use during the early days of the Johns Hopkins Clinic. The first thing that we did for a patient, no matter how ill she was, was to deliver her and the deliveries were usually done through the pelvis, as Caesarean sections were not used at the time of which I speak. The dilatation of the cervix of a primipara during the last month of pregnancy was an extremely serious and difficult procedure and usually shocked the already ill patient greatly. We called the operation accouchement forcé and the baby was delivered by version and extraction. After that, the patient was sweated and bled and as you can see by the chart, the maternal death rate was high.

The transitional period came next, beginning about twenty years ago. During this time some of the patients were delivered by Caesarean section because of the difficulty of dilating the cervix; some by vaginal Caesarean section, and others were treated more conservatively, in that they were given sedatives and opiates and the baby disregarded for the time being. A slight fall in the maternal mortality was noted during that period.

The conservative period followed, and consisted principally of allowing the child to remain undelivered until at least the cervix was dilated by the regular process of labor. The patient was given sweats, a certain amount of venesection, and opiates. Again, you see a fall in maternal mortality. We are now using the so-called modified Stroganoff treatment which is somewhat as follows: The patient who has had one or more convulsions is put in a specially prepared sound-proof room with darkened walls and dark shades over the light. She is kept as quiet as possible. Nothing is done toward her immediate delivery. She is given 1/4 grain of morphine on admission and a small amount of blood is withdrawn for chemical examination. She is then given large doses of chloral hydrate by rectum and the morphine is occasionally repeated. We do few, if any, venesections, and the dry sweat has been discarded. Liquid nourishment is given if necessary through the nasal tube. Some of these patients show marked improvement, the symptoms and signs clear up, there is no return of convulsions and they are then spoken of as intercurrent cases of eclampsia. Some authorities recommend that these patients be allowed to go into labor spontaneously, but we feel that it is better technique to induce labor by either rupturing the membranes or by the insertion of a bougie in these so-called inter-

current cases. If the convulsions continue, very often the patient goes into labor spontaneously, and it is sometimes very difficult to tell whether she is in labor unless frequent rectal examinations are done, because of course, she is entirely unconscious during a severe attack of eclampsia. As soon as the cervix is fully dilated, the patient is promptly delivered with forceps, and unquestionably an improvement occurs in the general condition when the baby is removed from the birth canal. I have repeatedly seen the convulsions diminish in frequency and sometimes disappear altogether on the delivery of the baby. Whitridge Williams was convinced that Caesarean section done upon a patient who is ill with actual eclampsia was followed by most serious results, and we have avoided, if possible, doing this operation except as already stated above, in the preëclamptic stage.

Again, our statistics show a fall in maternal mortality. It is true that the record of deaths is high and considerably higher than is shown by Stroganoff himself in Russia and some of the other clinics in Europe and this country. We are not satisfied with our results, but we believe that a continuation of this line of treatment is justified. We have proved by a study of our patients that a great many women who have suffered with eclampsia, in fact, over 20 per cent of them, show definite kidney damage which causes serious trouble in future pregnancies; so that one has to give an extremely guarded prognosis as to the ability of these patients to undergo subsequent parturition.

Before closing, I want to emphasize again the importance of proper prenatal care. We do not subscribe to the statement, which is often made, that eclampsia is always a preventable affection. This is unquestionably not so, but we do feel strongly that many of the preëclamptic symptoms can be recognized early and by proper treatment the patient can be prevented from reaching the stage where convulsions are imminent. In my private practice, I have noted with a great deal of satisfaction that proper prenatal care given to intelligent people is followed by most gratifying results.

Again, Mr. President, let me thank you for the invitation to appear before this Society.

DISCUSSION

(Dr. Eastman asked a question with regard to the prenatal care used.)

Dr. Durfee: I would like to ask Dr. Bergland just what method he includes in his prenatal care among those patients who are still ambulatory and not ill enough to go to a hospital. Just how far does he go in his treatment and what does it include? I would like a word on the fulminating type of eclampsia that arises almost without symptoms among patients who have been well supervised. Also what is his procedure for postpartum eclampsia?

Dr. Bergland, concluding: I wish to congratulate Dr. Eastman on the results he has obtained, which are certainly better than any we can show. I think it is difficult to draw a conclusion from the results of various clinics, because the type of patient is usually very different. At the Hopkins, 50 per cent of our patients are Negroes of an extremely low type and our white patients are not much better. They have a low resistance and it is difficult to make them carry out the proper prenatal care even with the supervision of the social service department. I think that explains, in a way, our high mortality, and then one must remember that a great many of our patients are admitted to the Clinic desperately ill, and have had no prenatal care whatever. With regard to prenatal care, I would say that we bring them into the hospital as soon as the symptoms and signs become at all marked, and we get suspicious when the systolic blood pressure gets above 135. I have already outlined the type of care that is generally used after the patient has been admitted to the hospital. Certainly home treatment among the patients of the intelligence we see in the Clinic is absolutely unsatisfactory. In dealing with private patients, one can put the patient in bed at home, regulate her diet in the proper way, save and examine all urine and follow her blood pressure carefully. But if she does not show definite signs of early improvement, she is promptly taken to the hospital. I agree with Dr. Durfee that there is a fulminating type of eclampsia which may develop in carefully supervised patients, and is often of a very deadly variety. Particularly is this true among women who have little or no edema. We use the same treatment on this type of patient that we do on the other eclamptics, but we feel very dubious as to the outcome. With regard to postpartum eclampsia, it has been my luck to see very few maternal deaths from this variety. It seems to me that the patients are not likely to be so sick, although I know that a good many careful observers would not agree as to this latter point. We treat them with rest in a dark room, with morphine and chloral as has been outlined in the treatment of antepartum eclampsia. I have seen two patients who resisted all forms of treatment during the postpartum attack, show definite signs of improvement after 25 cc. of spinal fluid has been withdrawn. In one case, I saw a patient recover from a postpartum eclampsia who continued to have convulsions during a whole week after the baby had been delivered. This patient became entirely well and has since had a second child without any recurrence of toxic symptoms.

MISCELLANY

RECENT DEATH

BEAN — John H. Bean, M.D., Burlington, Vt., a practicing physician in Burlington for the last fourteen years, died early Monday evening, March 25, 1935, at a local hospital following a week's illness.

Dr. Bean was born in Pentwater, Mich., June 6, 1868, and went to Vermont, early in life. He attended public schools in Milton and Burlington, Vt., Montpelier Seminary and went to Johnson where he graduated in 1892. In 1893 he entered the University of Vermont College of Medicine and graduated in 1896, going directly to Sheldon, Vt., to practice medicine. After spending four years there, he moved to Jeffersonville, Vt., where he continued his

practice for twenty years coming to Burlington in the fall of 1921.

Dr. Bean was active in his profession until the time of his death. He leaves a nephew, Leland E. Smith, who resided with him; also cousins in Milton, Vt., and in California.

VERMONT DEPARTMENT OF PUBLIC HEALTH

MARCH, 1935

During the month of March, there were reported 79 cases of chicken pox, 2 cases of diphtheria, 411 cases of German measles, 37 cases of measles, 7 cases of mumps, 111 cases of scarlet fever, 5 cases of undulant fever, 8 cases of tuberculosis and 191 cases of whooping cough.

The Laboratory of Hygiene made a total of 1,766 examinations during the month, classified as follows:

Examinations for diphtheria bacilli	137
" " Widal reaction of typhoid fever	37
" " undulant fever	54
" " gonococci in pus	117
" " tubercle bacilli	149
" " syphilis	637
" of water, chemical and bacteriological	39
" " water, bacteriological	213
" " milk, market	210
Examinations of milk, submitted for chemical only	19
" " milk, submitted for microscopical only	0
" " foods	4
" " drugs	15
" for courts, autopsies	2
" " courts, miscellaneous	14
" of animal heads for evidence of rabies	0
" for presence of malaria	1
" miscellaneous	116
Autopsies to complete death returns	2

The Division of Venereal Diseases has received reports of 19 cases of syphilis and 23 cases of gonorrhea. Seven hundred and eighty-four Wassermann outfits and 326 gonorrheal slides were sent out.

The nurses of the Poliomyelitis After-Care Division made 116 home visits in March, seeing 137 patients. Two patients were discharged from the Children's Hospital in Boston and five patients admitted to the Audubon Hospital. Thirteen new pieces of apparatus were fitted. The vocational worker of this Division reports sales made amounting to $12.50 for the month of March.

The Division of Public Health Nursing is supervising the work of thirty-three V. E. R. A. nurses and three dental hygienists. Nine hundred and seventy-five notifications of births and 1,529 pieces of literature were sent out by this Division in March.

RECENT CHANGES IN GERMAN HEALTH INSURANCE UNDER THE HITLER GOVERNMENT

BY MICHAEL M. DAVIS, PH.D.,* AND GERTRUD KROEGER*

ONE and a half years of National Socialist Government in Germany have brought about many major changes in all fields of public life, including that of labor legislation. Amidst this general upheaval the system of social insurance, which has been in existence for over half a century and which serves a majority of the German people, has remained unaltered in its essentials. The significance of this fact becomes more apparent when one considers the multitude of reform plans which were proposed and caused often violent discussion in the last decade. An examination of the condition of the social insurance system was among the first tasks undertaken by the new government. Considerable thought was given to proposals favoring a system of public relief for the needs of the people instead of social insurance. Examination of the situation led to the rejection of this scheme and maintenance of the basic features of the existing system. A number of changes, however, were made. Among these there are two major ones which seem to be largely unknown to American readers, but to which attention should be given at a time when the daily papers and magazines abound with discussions of proposed plans for social security for the people of the United States.

The following discussion is an attempt to describe the changes in sickness insurance thus far made by the Hitler government in an objective manner.

The two changes are as follows:

I. General administrative reorganization of sickness insurance, contained in a law of July 5, 1934.

II. New relations of physicians to the insurance system, established by two decrees of the Minister of Labor, December 19, 1933, and May 17, 1934.

I

The innovations made by the law of July 5, deal (1) with the provision of preventive medi-

*Davis, Michael M. — Director for Medical Services, Julius Rosenwald Fund, Chicago, 1929-. Kroeger, Gertrud — Study of Employment Offices in Germany, 1931. For records and addresses of authors see "This Week's Issue," page 1057.

cal care; (2) with the better distribution of sickness risks; and (3) with a new plan of administration of the various insurance carriers.*

(1) *Prevention.* The field of preventive care in Germany has in the past suffered from a great deal of overlapping among the various insurance branches, mainly health insurance and annuity insurance.† The administrators of the latter discovered in the years of its early existence that it cost the insurance fund less money to prevent invalidity or to rehabilitate patients than to pay them an annuity for an indefinite number of years. To be sure there was also a humane motive behind the actions of the insurance executives, but in the main, the business principle of least cost for maximum results prompted the establishment of preventive work which through recent decades has been extended rapidly.

Health insurance lagged behind in the application of preventive measures, although some individual insurance bodies, especially a few large ones, did excellent work in this field. Referral of patients to the medical agencies of the annuity insurance was another means which was used by the health insurance carriers to some extent for patients who were entitled to the services of the other insurance offices.

Both annuity and health insurance were interested in the prevention of chronic and incurable illnesses, and in persons requiring prolonged treatment, mainly for tuberculosis. In most cases, the insured person was a member of both insurance groups and thus entitled to the services of both. A final answer regarding the assumption of responsibility for such a patient was often delayed, because of the overlapping of the scope of these insurance branches. Furthermore, most health insurance bodies were handicapped in the establishment of preventive and rehabilitative work because of lack of funds. Rehabilitation work especially, requires a prolonged treatment and consequently a good deal of money and cannot, therefore, be undertaken by organizations with a small number of members and necessarily limited funds.

The new law seeks to remedy another situation, namely, the disadvantages which grow out of the existence of the large number of locals, many of small membership. This condition made it difficult to carry through programs requiring action upon a community basis. The new law makes preventive work the joint responsibility of all the health insurance and the annuity insurance organizations of a given district. Attempts were made in the past to promote such work by voluntary associations of health insurance carriers and other interested public bodies. These efforts, however, rarely went beyond printed statements. The agencies concerned with the problem usually did not progress beyond an expression of their intention to coöperate. Their coöperation has now become compulsory. The executive agency for such a district will be a new type of district insurance office. It will have jurisdiction over all matters of invalidity insurance, and the preventive and rehabilitative work of the sickness and annuity insurances. Boundary lines between health and annuity insurance for the whole important field of preventive work are thus wiped out, for the benefit of the insured as well as in the interest of both types of insurance carriers. The scope of work of most health insurance organizations is thus greatly enlarged. The cost of the work will be borne jointly by all member organizations.

A new emphasis upon preventive work also is apparent in the legal provision for a general health program which is to be developed by the District Office. The entire field of preventive work, for the insured as well as for the noninsured population, will thus be the responsibility of one executive agency.

(2) *Better distribution of risks.* The diversity of health insurance organizations has had the further disadvantage of preventing a fairly even spreading of insurance risks. It is a well-known fact that the risk of sickness varies with the occupation and with the income level. The existence, for example, of special insurance organizations for salaried office employees, removed from the General Locals a group of people whose contributions fall within the higher brackets and whose risks of sickness are relatively less than those of industrial workers and similar groups, thus weakening the status of the General Locals.

Medical care for the members of the family of the insured has, in recent years, been made compulsory under the German law. Consequently, the number of members with families influence directly the expense for medical care and indirectly the amounts of contributions needed to balance the budget. In other words, organizations which have a predominance of married members, and consequently higher cost for medical care, would tend to be forced to increase their income by exacting higher contributions from their members, thus adding further to the financial load to be borne by heads of families, while, on the other hand, members of locals with a large number of single persons, like the locals of the salaried office employees, carry a much smaller burden.

The distribution of the risk of sickness is further affected by the differences arising out of certain types of occupation, e.g., the high sick-

*The term carrier is used to denote the individual insurance body, either a district office or a local office. For want of a better term, we shall call the local organizations of the health insurance "locals". Frequently these organizations have been called "funds", a somewhat literal translation of the German term "Kassen". Since the English word fund has an entirely different connotation than the German "Kassen", it seems advisable not to use this term.

†The annuity insurances comprise (1) invalidity and old age insurance; (2) salaried employees' insurance (invalidity and old age).

ness risks of the miners. Under the new law a common fund will be established to overcome these several handicaps, to assure a more even distribution of risks, and consequently a more even distribution of size of contributions. Each health insurance carrier will be required to pay a certain percentage of its income into this common fund.* A maximum limit will be set for such payments. The fund will be administered by the District Office.

(3) *Administration of the Insurance Carriers.* Under the old law, the insurance system adhered to the principle of self-government on a democratic basis. The administrative bodies of each carrier were committees elected by vote of the constituent members and of their employers. Both parties were represented in the executive committees.

The National Socialist theory of administration rests upon the principle of "leadership", and has substituted individual "leaders" for the democratic committees. Executive power is conferred upon one man, who must answer for his acts only to his superiors and who is responsible for the deeds of his subordinates. The leader is appointed by a superior officer; he is not elected as was the case under the former rules. He can be removed from his post by his superior officer, but not by popular vote.

The Reichsversicherungsamt in Berlin is the highest office in charge of the social insurance system. Appointment of leaders is made by a superior officer depending upon the type of carrier, e.g., leaders of General Locals will be appointed by the leader of the District Office; the Minister of Agriculture will appoint the executive of rural locals, and so forth. Thus a complete hierarchy will be established throughout all administrative levels. The councils of each insurance carrier, whose functions will be discussed later, will, however, have the right to suggest for the position of leader anyone whom they think to be especially well qualified.

This new system may be benefited by all the advantages and fraught with all the dangers of a semi-dictatorship. Much, if not everything, will depend upon the selection of the leader. On the other hand, the one-man principle presupposes the existence of an aristocracy of leaders, of men with great vision, of a high degree of personal integrity, having executive ability and being guided by an innate liking of their fellow beings. They must be able to find the real source of their strength and their power mainly in themselves. They cannot look to committees and political parties for moral and material support. Neither will they have the benefit of criticism and opposition which their predecessors found under a democratic system.

Under the new law the executives are to be aided in their work by an Advisory Council which will be established for every carrier. The main purpose of the Council will be to serve as a consultant to the leader of the insurance carrier. Other duties may be imposed upon it in the future by the Minister of Labor. It is impossible to say exactly what its final tasks will be until the current work on the new communal law is completed. It is fairly certain, however, that the council will serve in particular as a consulting link between the insured population and its insurance office. It is, therefore, of interest to know what elements are represented in the Council. The law declares that it shall include representatives of employers and employees, a representative of the local administrative authority and a physician.

Employers and employees will be represented in equal number.* They will be appointed by the superior office on the basis of suggestions made by their respective organizations. Only employers whose employees are members of the respective locals are eligible to membership.

New, and of far-reaching consequence, is the addition of a physician to the Council. Its import may be considered from two angles. In the first place, it represents a victory for the medical profession which for decades has fought for such representation. The claims of the physicians that the directing of medical care should be in the hands of medically qualified people have thus been recognized. The present arrangement for council constitution appears to approach the ideal by giving all groups interested in the providing and dispensing of medical care, the opportunity of voicing their opinions.

In the second part of the July code, which bears the title, "Reasons for the Enactment of the Law," there are contained a number of important statements of aims and policies. Mr. Hitler points out that the importance of preventive and curative medical work of the health insurance system has been and is steadily increasing as compared with cash benefits, and that as a consequence the responsibility of the medical profession has been and is growing steadily. He goes so far as to state that the success or failure of the task of the health insurance system rests with the German physicians. Their representative is expected to occupy the council seat, not—if the term may be permitted here—as the trade union delegate of his professional group, but as the representative and guardian of the health interest of the entire German people. This statement is important. It implies that the general health level of the population depends largely upon the medical services rendered under health insurance.

*It should be remembered that under the old system every local organization administered its funds independently.

*The representation of equal numbers of employers and employees is in accordance with the new distribution of contributions between employees and employers. The present system which demands of the employer one third and of the employee two thirds of the contribution will be changed to equal parts as soon as the government believes the employers to be able to bear the increased burden.

II

The second main group of changes is in accordance with the new position of the physician in the administration of health insurance. They contain the right of the profession as a whole to govern the admission of their colleagues to health insurance practice, and their remuneration for services rendered.

These new decrees of the Minister of Labor appear to be an attempt to utilize the experiences of the past. Germany was the pioneer in the field of health insurance. In 1883 there existed no empirical basis on which to build a comprehensive law. Neither the Health Insurance Act of 1883, nor the subsequent code of 1911, laid down in definite terms the status of the physician as affected by the various functions of the law, nor did they regulate the relationship between physicians and insurance carrier. Section 368, of the Reichsversicherung Ordnung, states only that the two parties may deal with each other on the basis of private contract. Nobody apparently foresaw in the early years of sickness insurance, the tremendous expansion of medical care in the decades to come. Neither the government, the carriers, nor the physicians themselves were aware of the consequences and complications which were to arise out of the existence of the law and the absence of definite regulations regarding the status of the physician. These complications were increased by the changes in economic, industrial and social organization, as well as by the remarkable development of medicine itself. A detailed discussion of the difficulties, of attempts to solve them and the means used is beyond the limits of this article. It must suffice to say that the major efforts of the physicians were concerned with gaining control over medical insurance practice. They argued that only the medical profession itself was in a position adequately to judge the work of the physicians. Their aims included the control of the admission of physicians to health insurance practice, the methods of remuneration for medical services, the question of "free choice of physicians" by the patient, and the supervision of the medical services rendered.

Similar to developments in industry, the physicians formed an association for their protection. Dr. Gustav Hartmann was the leader. The organization which he founded in 1900, and whose official name was the "Verband der Aerzte Deutschlands" has been better known under the name of its founder, "Hartmannbund".

The sickness insurance carriers also formed national organizations, not only for their dealings with physicians, but for the study and advancement of their mutual interests.

The exercise of the professional functions prescribed by the new decrees presupposes the existence of a professional organization ready and able to assume such responsibility. This organization is the Krankenkassenaerztliche Vereinigung Deutschlands (K.V.D. of Sickness Insurance Physicians in Germany). Originally developed out of local medical associations which were formed under a provision of the old Insurance Law (Section 368-A), its status was changed by the government decree of August 2, 1933, from a private organization to a corporation of public law with the prerogatives attached to such a status, especially the right to issue, within the limits of its field, rules and regulations which have power equivalent to legal ordinances. The old professional organizations, the Deutscher Aerztevereinsbund, and the Verband der Aerzte Deutschlands (Hartmannbund) were dissolved by the recent decrees. The K.V.D. is now the only representative of the physicians in the "corporative state." It is responsible for the professional aspects of rendering medical care to the population at large, not only to the insured population. Membership in it is compulsory for every physician engaged in health insurance practice. The association will become part of the proposed National Chamber of Physicians as soon as such a body is established. It will not, however, lose its separate identity and public character.

Under the new arrangement the K.V.D. assumes full responsibility for the provision of an adequate number of physicians. It also has the right to supervise the professional work of its members. One of the main causes of disputes between insurance carriers and physicians has thus been abolished.

Admission to practice under the health insurance law is redefined by one of the decrees as being the right and the duty of a physician toward the K.V.D. to participate in the medical care of the insured population. It should be noticed that the physician is directly responsible to his professional organization.

This principle underlies also the making of contracts. Formerly, every physician entered into direct, individual contractual relationship with the insurance local. Not so now. His professional organization, through its local bodies, will close the contract. Instead of the former right of an individual physician to close a contract for medical practice with a health insurance carrier, there exists now a mutual obligation between the physician and his professional organization. Both parties are bound by rights and duties.

The personal qualifications required of the physician applying for insurance practice are in accordance with the National Socialist policy, the requirements of which are set forth in the Civil Service Acts of 1933. The applicant must be a German citizen, must be in the possession of full civil rights, and must not be of Jewish

descent or married to a person of such descent. The requirement of medical practice after approbation is reduced from three to two years. Several types of practice will be recognized in fulfillment of this requirement. At least three months' work in rural areas is compulsory. It may be performed either as substitute for a physician having his practice there or as his assistant. The theory behind this prerequisite is the same as that behind the one requiring the applicant for the State Board Examination in jurisprudence to work in labor camps for a period of six months, namely, to give the young graduate an opportunity to mingle with all sorts of people in everyday life and thus, not only to broaden his general education, but also to assist him in gaining an understanding of the psychology of the people with whom he will have to deal in his later practice, and to attempt to bridge the existing gulf between the classes and between town and country. For the same reason, medical service in labor camps will be recognized as partial fulfillment of the required two years of practice. Such residence is not compulsory for the young physician. He must, however, not later than six months after his appointment, attend a course in medical insurance practice. These courses will be given by his professional organization.

In addition to these general requirements, certain conditions are mentioned as entitling an applicant to special consideration. Preference in admission to health insurance practice is to be given to married physicians with children. Physicians with children of school age will be preferred for appointments to positions in towns which offer educational advantages, provided that the applicant practice at least five years in a small town or rural community. Sons of physicians who desire to take over the practice of their fathers are to be allowed to do so.

Another means for the promotion of the welfare of the family is to be found in the establishment of a common professional fund.* The physicians' association has the duty to divert a certain percentage of the payments for medical services to a reserve fund.† One of the purposes of the fund is to provide additional remuneration, if needed, for physicians with larger families.

The distribution of physicians throughout the country is another element in the planning program of the new law. The entire country is divided into medical districts as determined by the physicians' association. The confusion which existed in the past with regard to the number of available applicants is to be eliminated by permitting each applicant to register for admission in only two districts, instead of giving him the right to an unlimited number of registrations as was the practice under the old law. The old basis of one physician to six hundred insured is in general maintained.*

Special provisions are made for over-supplied and under-supplied districts. In the former, the number of physicians will eventually be reduced in order to assure a livelihood for everyone. In the latter, more physicians are to be appointed. The common principle to be considered in both cases will be the provision of adequate medical care everywhere.

Under a system of absolutely free competition, economic and educational considerations attracted a large percentage of physicians to the cities. The population of sparsely settled rural areas, although insured, was often left without medical care. Distance handicapped the patient from reaching a physician, while the latter had difficulty in extracting a livelihood from a practice which imposed upon him much greater hardships and sacrifices than were demanded of his more favorably situated colleagues in the towns and cities. To assure an adequate income to rural physicians, especially in areas where the small number of inhabitants are unable to support such services adequately, will be the second purpose of the common fund.

This new scheme will receive additional importance with the execution of the government's plan to extend the establishment of small homesteads in the rural sections of the East of Germany and on moorlands which are being reclaimed.

An attempt to bring about a better distribution of physicians in rural areas by the provision of adequate incomes is paralleled by efforts to affect a better distribution of professional incomes in cities and towns. A general curbing of excessively high incomes appears to be intended, and is to be accomplished by the use of graded rate scales. The rate of payment is to decrease with the increase in the number of patients. The habit of some physicians to assume responsibility for a much larger number of patients than they can handle adequately is thus to be guarded against.

CONCLUSION

The recent changes can be best understood in the perspective of the historical development of sickness insurance in Germany. The first German sickness insurance law enacted in 1883, was put into effect by a Chancellor of the old monarchy, largely as a means of counteracting the growing Socialist party. The German Socialist party for a long time did not favor it, but finally made the policy its own. Sickness

*Under the new arrangement, the insurance carriers make payment for medical care only to the physicians' association, which in turn remunerates its members for their services according to a plan worked out by the association and approved by the Minister of Labor.

†Decree of the Minister of Labor, February 22, 1934.

*In considering the rate of insured to physicians it should be remembered that a large percentage of the insured have a family which under the existing law is entitled to medical care. The actual number of prospective patients exceeds, therefore, the 600 limit by a large margin.

insurance was steadily extended to a larger and larger proportion of the population, and after about twenty-five years, to most of the workers in agriculture and to domestic servants. In 1911, a general codification of the numerous social insurance laws was made, leaving the provisions for medical care intact. The World War inevitably endangered the financial situation of health insurance, but medical care continued to be provided and in many instances was even extended during this period because of the greater needs of the population.

In 1918, after the overthrow of the monarchy, the Social Democratic party came to power, the same party which had opposed the sickness insurance law of 1883. Sickness insurance, however, was not curtailed but was still further extended by utilizing the war time experiences, especially in the field of maternal health. Then the period of currency inflation followed, destroying the savings of all individuals and organizations. Since sickness insurance does not require the accumulation of large reserve funds, it was much less affected than were the insurances for old age and invalidity, which depend upon accumulated reserves. Inflation necessarily brought great hardships, but those falling upon physicians and insured persons were no greater than the sacrifices required of the majority of the German people. The work of sickness insurance continued through the period of inflation and the subsequent period of stabilization, beginning in 1924, and through the serious economic depression following the year 1928. The scope of medical care was even extended in this period, when in 1930 medical care for the dependents of insured persons was made compulsory. Up to this time it had been voluntarily rendered to a large majority of the people.

The second political revolution, beginning in 1933, when Hitler came to power, is leading to great reorganization of the social, legal, and economic systems in Germany. But again the laws and decrees which have been described in this article show that the changes made by the National Socialist régime in 1933 and 1934, maintain the essence of the system, remove much of the patchwork accumulated through the years, particularly during the economic depression, and make administrative changes with the aim of a better distribution of risks and a simplification of administration. Many of these changes had long been advocated by German experts on the subject. Medical service as provided under the old law remains without curtailment, and its scope is extended to include prevention and rehabilitation on a scale larger than ever before.

A system of furnishing medical care which has lasted through two political revolutions and the great economic changes of the last fifty years, which has been steadily extended during this period, would seem to possess elements of inherent stability. It would seem to have answered a definite need of the people and given a substantial degree of satisfaction. Finally, it is highly significant that the medical profession has been given a more definite and distinctive participation in the conduct of sickness insurance than it has possessed in Germany up to this time. Only time will show how these changes will work. The outlook for their success seems hopeful, since most of the changes appear to be the outcome of long-range historical forces.

A STUDY OF HEART DISEASE AMONG VETERANS*

IV. An Analysis of the More Frequent Types of Anatomic Heart Disease

BY PHILIP B. MATZ, M.D.†

THIS section of the study includes the discussion of the following anatomic types of heart disease: arteriosclerosis, enlargement of the heart, cardiac hypertrophy, chronic myocardial disease, and valvular heart disease.

ARTERIOSCLEROSIS

Arteriosclerosis is a disease of the blood vessels which is found with increasing incidence and severity in old age, although it is frequently found in middle age and in youth. No definite knowledge of the true nature of arteriosclerosis or of the factors which play a rôle in its etiology are known.

Klotz and Manning as well as Zinserling hold that the fatty streaks present on the intima of blood vessels are forerunners of arteriosclerosis. Ribbert on the other hand is of the opinion that these fatty spots may be seen in arteries of normal human beings from early youth to old age, and that they are due to a physiological absorption of lipoid material. According to Zinserling they bear no relation to the presence of infectious diseases, and are due to a number of factors, such as cholesterolemia, mechanical influences, and inherent conditions of the walls of the affected blood vessels.

Anitschkow in 1925 held that atheroma in man was primarily due to impregnation of the intima with lipoid material. This investigator showed by experimental methods that the feeding of animals with cholesterol resulted in

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changes which he thought to be equivalent to the changes found in arteriosclerosis of man. Clinically it has been shown by Joslin that diabetes mellitus is accompanied by an increased incidence of arteriosclerosis. He attributes the arteriosclerotic condition found in diabetes mellitus to an increased amount of lipoid material in the blood due to faulty metabolism. Wells is of the opinion that arteriosclerosis appears whenever the elastic elements of the media yield permanently through the loss of resiliency, whether because of local injury or gradual loss of elasticity, with the result that they cannot return to their original length after each stretching. With advancing years the ability to regenerate damaged elastic tissue is reduced as are all regenerative properties.

MacCallum states there is but little evidence in favor of the idea that infections either acute or chronic, play a part in the genesis of arteriosclerosis. In typhoid fever there is a deposition of lipoid substance in the intima of arteries, but this may be a transitory phenomenon. In tuberculosis, rheumatism, in various forms of arthritis, and in infections with streptococcus viridans, there is no tendency to the development of lipoid streaks or patches in the blood vessels, or of arteriosclerosis. On the other hand diabetes mellitus and nephritis are frequently accompanied by arteriosclerosis.

Ophüls[1] maintains that the development of arteriosclerosis is closely connected with injury to the arteries resulting from various infections, such as rheumatic fever. This observer holds that the arterial lesions seem to reach their full development after the active infectious process has long subsided. He is also of the opinion that general arteriosclerosis is sometimes, but by no means always, associated with hypertension. The highest degrees of hypertension develop in nephritis, or in arteriosclerosis associated with nephritis.

Rise of blood pressure frequently precedes the development of arteriosclerosis; the idea has, therefore, gained widespread acceptance that hypertension in itself is one of the causes of the arteriosclerotic lesion. The mere fact that there are cases of essential hypertension which persist for many years without leading to arteriosclerosis, and also because many cases of arteriosclerosis do not give a history of a preceding hypertension, seem to negate the assumption that a relation exists between hypertension and arteriosclerosis. Aschoff[1] holds that arteriosclerosis is the result of either diffuse or local wear and tear, which through changes in tension necessitates the formation of new elastic or fibrous tissue in the blood vessels. Klotz accepts the importance of physical strain as an etiological factor of arteriosclerosis, but states there is in addition an inflammatory factor which enters into its etiology.

Ophüls[1] is of the opinion that the tissue changes in arteriosclerosis are partly inflammatory, but to a great extent degenerative and reparative. In the arterioles the initial lesion seems to be a lateral subendothelial hyaline thrombosis followed by organization. In the larger arteries there is evidence of endothelial damage permitting the entrance into the intima, of blood plasma and blood cells, followed by proliferation and degeneration. Aufrecht as well as Klotz and also Sumikawa maintain that arteriosclerosis is a chronic productive inflammation.

In the present investigation it was found that 168 or 38.8 per cent of 433 cardiac patients gave evidence of arteriosclerosis. Of the total of 168 patients with arteriosclerosis, 117 were cases of general arteriosclerosis; thirty-eight were cases of local arteriosclerosis; and thirteen gave evidence of combined local and general arteriosclerosis.

An effort was made to classify 168 cases of arteriosclerosis according to the coexisting etiological types of heart disease. It was found that 120 or 71.4 per cent of the total number were cases of arteriosclerotic heart disease; eighteen or 10.7 per cent were rheumatic heart disease; fifteen or 8.9 per cent were syphilitic heart disease; the remaining number were found to have various other etiological types of heart disease.

In reviewing the anatomic cardiovascular findings in the group of 168 cases of arteriosclerosis it was found that the most frequent lesions were chronic myocardial disease, enlargement of the heart, hypertrophy of the heart, mitral insufficiency, aortic insufficiency, syphilitic aortitis with dilatation, and mitral stenosis.

A further study of the group of cases revealed the coexistence of a number of abnormal physiological cardiac conditions. The most frequent of these were hypertension, mitral incompetency, aortic incompetency, sinus tachycardia, partial auriculoventricular heart-block, anginal syndrome, and congestive heart failure.

Chronic disease of the kidney was the most frequent condition found outside the cardiovascular system coexisting with general arteriosclerosis.

LOCAL ARTERIOSCLEROSIS

Thirty-eight of the group of 168 cases of arteriosclerosis were found to have local arteriosclerosis. Thirteen patients showed the presence of both local and general arteriosclerosis. A study was made of the specific arteries affected in the group of thirty-eight cases of local arteriosclerosis. It was found that the most common vessels affected were the aorta and the coronary arteries. The most frequent sites of the local arteriosclerosis in the thirteen patients having a combination of local and general arteriosclerosis were the coronary arteries and the arteries of the brain.

ENLARGEMENT OF THE HEART

According to the terminology of the American Heart Association, enlargement of the heart includes both hypertrophy and dilatation. The relative importance of each in a given case can be decided by the clinical symptoms and signs. Enlargement of the heart was present in 139 or 32.1 per cent of the group.

Cabot[2] states that enlargement of the heart is seldom seen without evidence of valve lesions or pericarditis unless there is a definite chronic hypertension. This observer found a large number of cases of cardiac enlargement present in subjects with arteriosclerosis as well as in those affected with chronic nephritis. Frequently it is difficult to make a definite diagnosis of cardiac enlargement, particularly if x-ray evidence is not present. If, however, enlargement of the heart is suspected and hypertension coexists, the probability is that the patient has cardiac enlargement.

White[3] holds that of all structural abnormalities of the heart, enlargement is most common. This observer maintains that the degree of enlargement is an index of the extent of cardiac strain,—a very large heart indicating a severe cardiovascular burden which in turn implies a poor prognosis.

It is generally believed that dilatation accounts for most of the increase in size of the greatly enlarged hearts. Ordinarily hypertrophy alone does not increase the size of the heart very much, and frequently hypertrophy per se is not discernible by clinical examination. However, when the heart begins to dilate it causes an accentuation and extension of the hypertrophic changes of the myocardium.

White[3] is of the opinion that cardiac enlargement is due to a number of causes, such as valvular disease, coronary obstruction, an adherent pericardium, hypertension, thyrotoxicosis, severe anemia, emphysema, or myxedema. This observer maintains that the speed of enlargement and the preponderance of hypertrophy or dilatation depend upon factors of duration and extent of the causative factor. Occlusion of a coronary artery may result in a rapid cardiac enlargement due to the development of dilatation with hypertrophic changes when the heart begins to compensate. On the other hand, essential hypertension may cause a gradual enlargement consisting primarily of hypertrophy with an ensuing dilatation when the heart begins to fail.

White[3] holds that cardiac enlargement may occur at any age. In the young it is almost always the result of rheumatic valvular disease; in middle age it is due most often to hypertension, but frequently to chronic valvular disease of rheumatic or syphilitic origin; in old age cardiac enlargement is the result of hypertension, coronary occlusion, or chronic pulmonary disease.

Cardiac enlargement consists usually of hypertrophy of the myocardium and dilatation of the chambers of the heart. The increase in the size of the myocardium is due to an increase in the size of the individual muscle fibers, and not to an increase in the number of these fibers. According to Norris[4] enlargement of the heart may in part be due to an increased amount of connective tissue, fat, and blood vessels in addition to an actual increase of the size of the muscle fibers. The dilatation which is found in cardiac enlargement is the result of a stretching of the heart wall due to an atonic state of the musculature or to an increased work demand of the heart.

The coexistence of hypertrophy and dilatation in enlargement of the heart may be seen by a study of the data of Cabot[2] in 4,000 necropsies. This observer found that the two conditions occurred together 1,088 times; hypertrophy occurred alone 121 times; and dilatation occurred alone 118 times.

Among 433 patients with heart disease, it was found that 139 gave evidence of cardiac enlargement. An effort was then made to classify the latter group of cases according to the etiological type of heart disease. It was thought that in this manner information might be obtained which would throw light on the causative factor of the pathological changes which resulted in enlargement of the heart.

It was found that among 139 cases of cardiac enlargement, forty patients or 28.8 per cent of the group gave evidence of arteriosclerotic heart disease; twenty-eight or 20.1 per cent of the group had rheumatic heart disease; twenty-two or 15.8 per cent gave evidence of heart disabilities due to infectious diseases; twenty-one or 15.1 per cent gave evidence of syphilitic heart disease; nine or 6.5 per cent of the group had hypertensive heart disease; and the remaining number gave evidence of various other etiological types of heart disease.

There are certain anatomic lesions of the heart coexisting with enlargement which may possibly have acted as etiological factors of the latter condition. The most frequent of such heart conditions were chronic inflammatory or degenerative diseases of the myocardium, arteriosclerosis, mitral insufficiency, aortic insufficiency, mitral stenosis, syphilitic aortitis with dilatation, and chronic endocarditis.

The principal abnormal physiological conditions of the heart coexisting with cardiac enlargement were hypertension, mitral incompetency, aortic incompetency, congestive heart failure, sinus tachycardia, chronic auricular fibrillation, anginal syndrome, and auriculoventricular heart-block.

Chronic disease of the kidney was the most common condition outside the cardiovascular system coexisting with enlargement of the heart.

CARDIAC HYPERTROPHY

Ophüls holds that cardiac hypertrophy is commonly seen in generalized arterial disease, and in general arteriosclerosis. This observer also maintains that cardiac hypertrophy is a frequent accompaniment of essential hypertension. The presence of cardiac hypertrophy in cases of general arteriosclerosis is regarded by Ophüls as evidence of the previous existence of hypertension for a sufficient period of time to produce hypertrophy of the heart. This observer further holds that cardiac hypertrophy is much more likely to occur when the arterial disease is associated with serious diffuse disease of the kidneys. Norris[4] states that when hypertrophy is due to an obstruction to the outflow of blood, simple hypertrophy is induced; when it arises from diastolic overfilling, hypertrophy and dilatation occur. Hypertrophy affects only such parts of the heart musculature as are actually called upon to do extra work. In addition to the causes of cardiac hypertrophy already mentioned, valvular heart disease and increased work of the heart are frequent etiological factors.

Certain of the valvular diseases have characteristic effects upon the heart; for instance mitral stenosis affects the left auricle and the right ventricle; aortic regurgitation and aortic stenosis affect the left ventricle. A number of observers are of the opinion that hypertrophy of the heart may infrequently be found without any apparent underlying cause.

Among 433 cardiac patients it was found that 107 or 24.7 per cent showed evidence of hypertrophy of the heart. A study of these cases according to the etiological type of heart disease indicates that thirty-six or 33.7 per cent were arteriosclerotic heart disease; thirty or 28 per cent were classified as rheumatic heart disease; seventeen or 15.9 per cent were syphilitic heart disease; twelve or 11.2 per cent were patients with heart disease due to infectious diseases; and six or 5.6 per cent were hypertensive heart disease. The remaining number gave evidence of various etiological types of heart disease.

A number of anatomic lesions of the heart were noted as coexisting with cardiac hypertrophy. The most frequent of these were arteriosclerosis, chronic myocardial disease, aortic insufficiency, mitral insufficiency, and mitral stenosis.

The most common coexisting abnormal physiologic conditions of the heart in the group of 107 cases of cardiac hypertrophy were hypertension, aortic incompetency, sinus tachycardia, mitral incompetency, congestive heart failure, hypotension, and chronic auricular fibrillation.

It was further noted that chronic renal disease was the most common disease outside the cardiovascular system coexisting with cardiac hypertrophy.

CHRONIC MYOCARDIAL DISEASE

There are two anatomic types of chronic myocardial disease: first, myocardial disease due to inflammatory injuries. The lesions of this type may be exudative or proliferative and may either be confined to localized areas or scattered profusely throughout the musculature of the heart. This type of myocardial disease is characterized by exudation around the blood vessels which is followed by scar tissue formation in the periarterial areas when the lesions heal. The second type of myocardial disease is a fibrosis. It is purely a degenerative process characterized by the presence of scars, and atrophy of the muscle fibers with replacement by fibrous connective tissue. The latter type is usually due to coronary sclerosis.

DePorte[5] in a study of a group of cases of chronic myocardial heart disease found that the principal etiological factors of the inflammatory type were the various acute infections including rheumatic fever. The degenerative type of chronic myocardial disease characterized by fibrosis was due to such conditions as thyroid disease, hypertension, and arteriosclerosis.

Ophüls[1] in commenting on the relationship of arteriosclerosis and disease of the coronary arteries to myocardial disease found that there were two possibilities. One in which the coronary arteries became entirely obstructed by thrombosis with the development of large necrotic areas or scars in the myocardium. The second group in which the coronary arteries were narrowed, thus cutting off the blood supply and resulting in small areas of fibrosis in the heart musculature. In the latter group hypertension was a frequent coexisting condition.

Krumbhaar[6] is of the opinion that any condition which interferes with the normal supply of blood to the heart results in muscle degeneration followed by replacement with fibrous connective tissue. It is the opinion of this observer that arteriosclerosis and uncompensated cardiac valvular disease are two frequent causes of chronic myocardial disease.

Chronic myocardial disease is a very frequent finding both clinically and at postmortem. Thus DePorte[5] found 528 or 28.9 per cent of 1826 cases of heart disease in New York State with evidence of damage to the myocardium. Haven Emerson found that 1966 or 43 per cent of 4566 cardiac patients gave evidence of myocardial disease.

Among 433 cardiac patients in this study it was found that chronic myocardial disease was present in 194 or 44.8 per cent of the group. A compilation of these cases according to the etiological type of heart disease shows that sixty-nine or 35.6 per cent were in cases of

arteriosclerotic heart disease; forty-seven or 24.2 per cent were in rheumatic heart disease; twenty-nine or 15 per cent were present in heart disease due to infectious diseases; fifteen or 7.7 per cent were in syphilitic heart disease; and ten or 5.2 per cent were in cases of hypertensive heart disease.

A study was made of the most frequent coexisting anatomic heart lesions in the group of 194 cases with evidence of chronic myocardial disease; these were found to be arteriosclerosis, enlargement of the heart, mitral insufficiency, cardiac hypertrophy, aortic insufficiency, and mitral stenosis.

The most frequent abnormal physiological cardiac conditions coexisting with chronic myocardial disease were found to be hypertension, mitral incompetency, congestive heart failure, sinus tachycardia, aortic incompetency, and hypotension. Chronic renal disease was the most frequent condition outside the cardiovascular system coexisting with chronic myocardial disease.

VALVULAR HEART DISEASE

Valvular disease is part of a more extensive disease process of the heart frequently resulting in cardiac failure. Valvular heart disease should be considered from several angles, such as the nature of the causative factors; whether the cause is an infection; if the etiologic factor is an infection, is the infective process active or arrested; if active, is it progressive or at a standstill; the extent of the damage to the heart muscle or to the affected valves; and the degree of interference with the efficiency of the heart.

Laws[7] in a study of the etiology of heart disease in Whites and Negroes in the State of Tennessee found that of a group of sixty-eight patients with rheumatic heart disease, forty-four gave evidence of mitral lesions; three gave evidence of disease of the aortic valve; and twenty-one patients had lesions of both the mitral and aortic valves. Of fifty-one patients with syphilitic heart disease thirty or 58.8 per cent gave evidence of aortic insufficiency; ten or 19.6 per cent gave evidence of aortic insufficiency and aneurysm; eight or 15.7 per cent showed the presence of aneurysm alone; and three or 5.9 per cent gave evidence of myocardial disease.

Clawson, Bell and Hartzell[8] in a study of a group of 280 cases of valvular heart disease found that the mitral and aortic valves were most frequently involved; the tricuspid and pulmonic valves were involved next in frequency.

Norris[4] in a study of the relative involvement of the different valves found that of a total of 5535 cases, 3226 gave evidence of mitral disease, 1315 showed the presence of lesions of

TABLE SHOWING 200 CASES OF VALVULAR DISEASE CLASSIFIED BY ETIOLOGIC TYPE OF HEART DISABILITY

	Rheumatic	Syphilitic	Bacterial Infection	Sequel of Infectious Diseases	Thyroid	Arteriosclerotic	Hypertensive	General Systemic Disease	Congenital	Unknown Etiology	Total
Aortic insufficiency	2	24		3		3	1			2	35
Aortic insufficiency and aortic stenosis	1										1
Aortic insufficiency and mitral insufficiency		16				1				1	18
Aortic insufficiency and mitral stenosis		2		4							6
Aortic insufficiency, aortic stenosis, and mitral insufficiency	1								1		2
Aortic insufficiency, mitral insufficiency, and mitral stenosis	1	2				1					4
Aortic insufficiency, mitral insufficiency, and pulmonic insufficiency								1			1
Aortic insufficiency, mitral insufficiency, and tricuspid insufficiency		1									1
Aortic insufficiency, mitral stenosis, aortic stenosis, and mitral insufficiency	1		1								2
Aortic insufficiency, mitral stenosis, aortic stenosis, mitral insufficiency, and pulmonic insufficiency		1									1
Aortic stenosis	1			2				1			4
Aortic stenosis and mitral stenosis				1							1
Aortic stenosis, mitral stenosis, and mitral insufficiency	1										1
Mitral insufficiency	21			14	1	21	4			5	66
Mitral insufficiency and mitral stenosis	13		2	4		2				1	22
Mitral stenosis	28	1		2		2				1	34
Mitral stenosis and tricuspid stenosis					1						1
Total cases	70	47	3	30	2	30	5	2	1	10	200

the aortic valve, in 691 instances the mitral and aortic valves were affected, and in 116 instances the tricuspid valves were affected. There were other combinations of valvular disease, but these were of minor importance. Cabot[2] states that rheumatism usually affects the mitral valve, syphilis affects the aortic valve, and hypertension causes an enlargement of the whole heart and leaves the valves intact. Haven Emerson in a study of 4566 patients affected with heart disease found that 40 per cent gave evidence of valvular lesions. Cabot found that 21 per cent of a group of 1230 patients with manifest and latent heart disease gave evidence of valvular heart disease. DePorte[5] in a study of 1826 patients in general medical practice under treatment for heart disease found that 48.7 per cent gave evidence of valvular heart disease.

In the group of 433 cases of heart disease it was found that 200 or 46.2 per cent gave evidence of cardiac valvular disease. A study of the specific valves affected in the group referred to showed that sixty-six or 33 per cent gave evidence of mitral insufficiency; thirty-five or 17.5 per cent were cases of aortic insufficiency; thirty-four or 17 per cent gave evidence of mitral stenosis; twenty-two or 11 per cent gave evidence of both mitral insufficiency and mitral stenosis; eighteen or 9 per cent gave evidence of aortic insufficiency and mitral insufficiency; the remaining cases showed the presence of various other types of valvular heart disease the number of which was insignificant and the nature of the valve lesion being of no particular importance.

A study of the 200 cases of cardiac valvular disease revealed the presence of 277 individual valve lesions. It was noted that mitral insufficiency was the most frequent; mitral stenosis came next in frequency; and aortic insufficiency was the third most frequent valve disease noted. A tabulation was made of the 200 patients with valvular disease according to the etiological type of heart disease. It is noted that seventy of the 200 patients were cases of rheumatic heart disease; forty-seven were cases of syphilitic heart disease; thirty were classified as being the sequel of infectious diseases; thirty were arteriosclerotic heart disease; five were hypertensive heart disease; the classification of heart disease in the remaining cases may be seen by referring to the table.

Among the seventy cases of rheumatic heart disease the most frequent valvular lesions were mitral stenosis, mitral insufficiency, and combined mitral stenosis and mitral insufficiency. Among the forty-seven cases of syphilitic heart disease the most frequent lesions were aortic insufficiency, and combined aortic and mitral insufficiency. Among the thirty cases of heart disease, the sequel of infectious diseases, the most frequent lesion was mitral insufficiency. Among the thirty cases of arteriosclerotic heart disease the most frequent lesion was mitral insufficiency. Among the ten cases of heart disease of unknown etiology the most frequent lesion was mitral insufficiency.

The most frequent coexisting anatomic heart conditions found in the 200 cases of valvular heart disease were enlargement of the heart, chronic myocardial disease, mitral insufficiency, aortic insufficiency, mitral stenosis, hypertrophy of the heart, and general arteriosclerosis.

The most frequent abnormal physiological heart conditions found to coexist with valvular heart disease were mitral incompetency, aortic incompetency, hypertension, and congestive heart failure.

The most common conditions outside the cardiovascular system coexisting with cardiac valvular disease were syphilis, chronic tonsillitis, and chronic renal disease.

SUMMARY AND CONCLUSIONS

1. One hundred and sixty-eight or 33.5 per cent of the group of 433 patients with cardiovascular disease, gave evidence of arteriosclerosis. Of this number 117 were cases of general arteriosclerosis; thirty-eight were cases of local arteriosclerosis; and thirteen gave evidence of local and general arteriosclerosis.

A study of the anatomic heart findings coexisting with arteriosclerosis showed that the most frequent cardiac disabilities were chronic myocardial disease, enlargement of the heart, and cardiac hypertrophy. Hypertension, mitral incompetency and aortic incompetency were the most frequent coexisting abnormal physiological heart conditions in arteriosclerosis. Chronic renal disease was the most common condition outside the cardiovascular system found to coexist with arteriosclerosis.

2. The aorta and coronary arteries were the specific vessels most frequently affected with local arteriosclerosis. The most frequent sites of local arteriosclerosis in patients having a combined local and general arteriosclerosis were the coronary arteries and the arteries of the brain.

3. One hundred and thirty-nine or 32.1 per cent of the group of cases gave evidence of enlargement of the heart. Forty of this number were found in patients with arteriosclerotic heart disease and twenty-eight were patients with rheumatic heart disease.

4. Cardiac hypertrophy was found in 107 or 24.7 per cent of the group. The largest number of these were in cases of arteriosclerotic heart disease and the next largest number were in patients with rheumatic heart disease.

5. One hundred and ninety-four or 44.8 per cent of the group of cardiac patients gave evidence of chronic myocardial disease. Sixty-nine or 35.6 per cent of the number were in patients with arteriosclerotic heart disease; and forty-seven or 24.2 per cent of the group were in

patients with rheumatic heart disease. The most frequent anatomic heart lesions coexisting with chronic myocardial disease were arteriosclerosis and enlargement of the heart. The most frequent abnormal physiological heart condition coexisting with chronic myocardial disease was hypertension. The most frequent condition outside the heart and blood vessels coexisting with chronic myocardial disease was chronic renal disease.

6. Two hundred or 46.2 per cent of the group gave evidence of cardiac valvular disease. These 200 cases showed the presence of 277 valve lesions. The most frequent lesion found was mitral insufficiency; next in frequency were mitral stenosis, and aortic insufficiency. The most frequent combinations of valvular lesions were mitral insufficiency and mitral stenosis; and mitral insufficiency and aortic insufficiency.

A classification of the 200 patients with valvular heart disease according to the etiologic types of heart disease revealed the fact that seventy were cases of rheumatic heart disease; forty-seven were syphilitic heart disease; thirty were cases of heart disease, the sequel of infectious diseases; and thirty were cases of arteriosclerotic heart disease.

REFERENCES

1. Ophüls, William: Arteriosclerosis. Stanford University Publication. 1: No. I, 1921.
2. Cabot, Richard C.: Facts on the Heart. Philadelphia: W. B. Saunders Company, 1926.
3. White, Paul Dudley: Heart Disease. New York: The Macmillan Company, 1931.
4. Norris, George William: Studies in Cardiac Pathology. Philadelphia: W. B. Saunders Company, 1911.
5. DePorte, J. V.: Heart disease in general medical practice. Am. Heart J. 8: 476 (April) 1932-33.
6. Krumbhaar, Edward B.: Myocardial disease. Nelson's Loose-Leaf Living Medicine. 4: 477, 1924.
7. Laws, Clarence L.: The etiology of heart disease in Whites and Negroes in Tennessee. 8: 608, 1932-33.
8. Clawson, B. J.; Bell, E. T., and Hartzell, T. B.: Valvular diseases of the heart, with special reference to the pathogenesis of old valvular defects. Am. J. Path. 2: 193 (May) 1926.

A REPORT OF CERTAIN ACTIVITIES OF THE JULIUS ROSENWALD FUND

The trustees of the Julius Rosenwald Fund, at the annual meeting held in Chicago, May 19, 1935, appropriated two hundred and eighty-four thousand dollars ($284,000) for the work of the year beginning July 1, according to an announcement by Edwin R. Embree, President of the Fund. The appropriations were made for rural education, medical services, and Negro welfare.

The Fund will maintain a staff of twelve teachers and students who will work with schools in the southern states in an effort to give education a more direct bearing upon life in rural communities. "During the recent industrial era," Mr. Embree said, "schools have trained children almost entirely for success in the cities. Many present trends lead back to country life, and the schools must begin to fit children for life in the country and must coöperate with the health, agricultural and cultural agencies which are working to improve rural conditions."

It was announced that the Fund will continue its active interest in health insurance, pay clinics, public health, and other organized services which will make good medical care more available to people of small incomes. "Most striking among recent developments," said Dr. Michael M. Davis, Director of the Fund's medical division, "is the growth of plans initiated by physicians, hospitals or lay bodies, designed to improve the quality or reduce the costs of medical care, or to make it easier for the average family to pay for it. To the office of this Fund alone there has recently come knowledge of 344 plans and projects in all parts of the country. Among these are projects for budgeting hospital bills at a cost of from $5 to $10 a year, which have been set under way in over 40 cities during the last two years, sponsored by the American Hospital Association and endorsed in principle by the American College of Surgeons and recently by the editor of the *Journal of the American Medical Association.* The general public receives and pays for medical care. Physicians, dentists, nurses, hospitals and clinics furnish it. The public and the professions have a common interest in keeping up the quality of medical care and in working together on plans whereby the average family may get treatment without ruining its finances or asking for medical charity."

During the past year Dr. Davis served on the consulting staff of President Roosevelt's Committee on Economic Security, and Dr. C. Rufus Rorem, of the Fund's staff, served as consultant in group hospitalization to the American Hospital Association.

The Chairman of the Board of Trustees of the Fund is Mr. Lessing J. Rosenwald; Mr. Edwin R. Embree is President. The other members of the Board of Trustees are Dr. W. W. Alexander, Dr. John J. Coss, Robert M. Hutchins, Dr. Charles S. Johnson, Dr. Charles H. Judd, Leonard M. Rieser, William Rosenwald, Alfred K. Stern, and Frank Sulzberger.

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

EDITED BY RICHARD C. CABOT, M.D.

CASE 21221

PRESENTATION OF CASE

A fifty-two year old Canadian shoemaker entered complaining of abdominal pain.

Twenty-seven hours before admission, while sitting in an easy chair after supper, he was suddenly seized with severe epigastric pain which lasted a few minutes. It was soon followed by a second pain which seemed to spread along both costal margins and then become generalized over the upper abdomen. Twenty minutes later he began to vomit. The vomiting continued throughout the night and up until six hours before admission. A physician was called that evening and gave him a hypodermic. He was called again the following evening at which time he gave the patient another hypodermic and advised admission to the Emergency Ward. There was no history of urinary symptoms, chills, fever or costovertebral pain. There was also no history of shortness of breath, palpitation, edema or precordial pain.

The patient had had intermittent attacks of epigastric distress during the past fifteen years. The attacks came on one or two hours after meals and were relieved by soda. The pain had never awakened him at night and there had been no vomiting, hematemesis or melena.

His family history is non-contributory.

Physical examination showed an obese, elderly man in a stuporous condition but who answered questions fairly well when aroused. His pupils were contracted but reacted slightly to light. His teeth were in poor condition. There was no lead line. He could not sit up in bed because his knees were flexed permanently. The heart and lungs were negative. The blood pressure was 110/90. The abdomen was distended and tympanitic throughout. There was tenderness and spasm in all quadrants, most marked in the upper abdomen. Liver dullness was present. Peristalsis was audible and normal. On rectal examination there was a slightly enlarged prostate. There was no tenderness or masses. The knee jerks were normal.

The temperature was 101.1°, the pulse 110. The respirations were 10.

Examination of the urine was negative. The blood showed a white cell count of 26,000.

An exploratory laparotomy was immediately performed.

DIFFERENTIAL DIAGNOSIS

DR. EDWARD L. YOUNG, JR.: The presenting symptoms of this man's illness could be the starting point of so much that it is hardly worth guessing until we get "some more packing out of the case".

I assume that the hypodermic was given the evening of onset, within an hour or two, and apparently it was enough of a hypodermic so that it made his pain subside very much and he did not call the doctor again until the next evening. Another hypodermic was administered and admission to the Emergency Ward advised: not the best way of handling such a condition.

"The pain had never awakened him at night and there had been no vomiting, hematemesis or melena." An attempt to find out whether there was any good story of peptic ulcer.

It is very difficult for us to get a picture from paper which may be comparable to the picture this patient would give. It would be interesting to know the impression as to whether this stuporous condition was connected with the contracted pupils; in other words, whether it was the result of a heavy dose of morphine or whether it was due to the disease from which he was suffering. But the pupils did react slightly to light. That is important to consider.

"He could not sit up in bed because his knees were flexed permanently." I assume that means an arthritic condition. Of course, in acute perforation or peptic ulcer we do occasionally see a person who is bent over and contracted because of abdominal pain and the muscles are so tense that you cannot move them.

"Peristalsis was audible and normal." Extremely important, I believe, if true.

"The respirations were 10." There is a suggestion of morphinism there.

There are several contradictory facts. An acute epigastric pain of this type of course can be coronary but should not be coronary over twenty-four hours with this abdominal picture and with a negative heart examination. There have been a number of cases where the abdomen has been opened for perforation, when the condition was tabetic crisis but this man has pupils which reacted and knee jerks which are present. He has a past history of epigastric distress coming on one or two hours after meals, relieved by soda. It is not impossible that that is not peptic ulcer but a gall bladder condition. The more I see of patients whose distress is relieved by soda the more I want to know how it is relieved; whether it is a fairly rapid subsidence of the pain after taking the soda, or the production of gas which is belched with immediate relief. Although it is by no means pathognomonic, that latter form of relief is often the type that goes with gall bladder disease and not with ulcer. We see it frequently, I think.

There is no other non-surgical or extraäbdominal condition that we would want to consider. A lead colic is not the colic that goes with a distended, tympanitic abdomen. With this description we must consider acute cholecystitis with perforation, acute pancreatitis and a rapidly fulminating and consequently a rapidly perforating appendix. In spite of the negative urine this might fit the fulminating type of acute hematogenous kidney, except for the absence of extreme costovertebral tenderness.

The conditions that would cause severe pain of this type seem to me to demand a silent abdomen at the end of twenty-four hours. That is less true of acute gall bladder. Is there any other condition with severe pain? We do not know whether he had an enema or any response to it, but mesenteric thrombosis could give very severe pain.

It seems that the important thing here is to make a diagnosis as between a non-operative and an operative condition. I am unable to make any more accurate diagnosis than that I believe it is surgical, that it is not tabetic, that it is not coronary disease, and I think he demands surgery. That is as far as I should be willing to go, assuming I had heard the peristalsis. I do not know whether it is mesenteric thrombosis or volvulus. Of course the white count if it is intestinal obstruction means strangulation, volvulus, strangulated hernia or something of that type. I think that is as far as I am willing to go except to say that I should operate for a surgical condition.

Clinical Discussion

Dr. Tracy B. Mallory: Are there any more suggestions?

The house diagnosis was question of acute pancreatitis, and question of perforation somewhere in the gastrointestinal tract. They evidently felt as you did, Dr. Young.

Dr. Herbert D. Adams: I saw this man in the Emergency Ward and operated upon him, and the thing that struck me chiefly about him was the fact that he had had a very severe attack of upper abdominal pain and in the course of twenty-seven hours was practically in shock. The other outstanding symptom, which we felt was very important in the differential diagnosis, was the persistent vomiting. The patient had an ashen gray cyanotic appearance described as being characteristic of acute hemorrhagic pancreatitis. The abdomen was distended, spastic, tender, and he had definite peristalsis. One would not expect peristalsis either with a widespread bacterial peritonitis or with a chemical peritonitis such as one gets with pancreatitis. The liver dullness was not obliterated, which is definitely against a perforated peptic ulcer with such a widespread peritonitis. An x-ray taken on the way to the operating room showed no free gas under the diaphragm. Our preoperative diagnosis was, therefore, acute pancreatitis.

The abdomen was opened under local anesthesia. It was full of bloody fluid and there were fat necroses throughout the omentum and the mesentery. The lesser peritoneal cavity was opened and the pancreas found to be greatly swollen and indurated throughout its length. The capsule was incised and the body and tail drained. The gall bladder was also drained. The patient was extremely sick and it was felt that very little benefit would be derived from the operation.

Clinical Diagnosis

Acute pancreatitis.

Dr. Edward L. Young's Diagnoses

Acute surgical abdomen.
Perforation?
Pancreatitis?
Acute cholecystitis?

Anatomic Diagnoses

Pancreatitis, acute hemorrhagic.
Fat necroses of peritoneum.
Pulmonary edema, slight.
Cholelithiasis.
Operative wound: Cholecystostomy and drainage of pancreas.

Pathologic Discussion

Dr. Mallory: The autopsy showed the characteristic appearance of an acute hemorrhagic pancreatitis with the lesion located in the body and tail rather than the head of the organ. It was very much swollen. When we cut into the organ we found alternating areas of chalky-white fat necrosis and hemorrhagic foci running from one millimeter up to a centimeter in diameter. The gall bladder was negative on the external surface but on opening it we found one small stone. There were no stones in the common duct, none in the papilla. The fat necrosis had extended to a large portion of the peritoneal surface and the parietal peritoneum and the omentum were closely and uniformly dotted with fat necroses. There were no other findings of any significance. I think we must assume that death was due essentially to shock coupled with the toxemia of pancreatitis per se.

Dr. Young: I think the audible peristalsis is very interesting because you would not expect it at that stage of the game.

CASE 21222

Presentation of Case

Approximately four months before entry the patient, a seventy-two year old Canadian barber, noticed that he was losing his appetite and getting weaker. He soon began to lose weight

and develop shortness of breath on exertion. He had no precordial pain, cough, cardiac asthma or hemoptysis. About two weeks before entry, on the advice of his physician, he entered a hospital, where he was told there was something wrong with his blood and that he needed x-ray treatment. He was given some medicine, following which he felt much better. His appetite was good and his bowels regular. His stools were not remarkable. He had noticed "stiffness" in his upper abdomen. There was no history of nosebleeds or purpuric manifestations. During the past four months he had lost about thirty pounds in weight.

His family and marital histories are noncontributory.

He had had small protruding hemorrhoids for which he had been using suppositories. At about the time of the onset of his present illness he had slight rectal prolapse which was replaced by his physician.

Physical examination showed an elderly man with obvious weight loss. There was some arteriosclerosis of the retinal vessels but no hemorrhages or exudate. The heart and lungs were negative. The blood pressure was 130/70. The liver was markedly enlarged, stony hard, nodular and non-tender. It extended 12 centimeters below the costal margin in the right midclavicular line and to the umbilicus in the midline. There was slight pitting edema of the left ankle.

The temperature was 99°, the pulse 100. The respirations were 24.

Examination of the urine was negative. The blood showed a red cell count of 4,820,000, with a hemoglobin of 80 per cent. The white cell count was 19,400, 68 per cent polymorphonuclears. The stools were negative. A Hinton test was doubtful, a Wassermann test negative. The basal metabolic rate was +34.

X-ray examination of the chest showed a high diaphragm on both sides with hazy costophrenic angles. The left upper lobe was small and dense. The left lung root was large, irregular and showed what appeared to be linear areas of infiltration extending outward and upward from it. The trachea was not definitely deformed. The heart was small. There were no definite mediastinal masses on the right side. The stomach was displaced downward to the left by a mass in the region of the liver. The first portion of the duodenum was constantly deformed, apparently due to an extrinsic annular mass which infiltrated the mucosa slightly. There was no obstruction in the small bowel or duodenum. A film taken twenty-four hours later showed that the transverse colon and the hepatic flexure were markedly displaced downward. The splenic flexure was high. Multiple diverticula were seen along the descending colon and sigmoid. Films of the spine and pelvis showed no evidence of disease.

He was given high voltage x-ray treatment to his chest which produced at the end of two weeks slight but fairly definite reduction in the size of the shadow in the left upper lobe. He developed jaundice. An icteric index was 50. He rapidly failed and died, approximately one month after entry.

Differential Diagnosis

Dr. James H. Townsend: In a man of that age, loss of appetite and increasing weakness immediately suggest malignant disease of some sort, perhaps most characteristically in the stomach, although it might be elsewhere. It might also be any other constitutional disease like chronic nephritis or pernicious anemia; but it is most suggestive of malignancy.

"He soon began to lose weight and develop shortness of breath on exertion." This also adds to that thought, the shortness of breath suggesting anemia along with malignancy, perhaps with something in the chest.

We can draw whatever conclusions we want from his stay in the other hospital; but I do not think it helps a great deal. We can only guess as to what the medicine might have been. I doubt if it had any real physical effect on his underlying condition, because of what follows. It is well known that patients with the gravest diseases can be made to feel better temporarily by the use of placebos.

They do not tell us how long he had been bothered with hemorrhoids. One would infer that probably they were something recent. There is a suggestion that there may have been something out of order about his rectum and that the malignant disease possibly was connected with it.

The description of the liver is very striking. It is the classic description of a liver infiltrated with malignant disease, more commonly carcinoma in type. Very few other conditions can produce a liver which can be accurately described as stony hard and nodular. The liver of syphilis with gumma might be nodular. I do not think it would usually be stony hard and very seldom would be as large as the liver described here. It is a very large liver, down to the umbilicus.

They have left out any reference to a rectal examination. In view of the very large liver and symptoms referable to the rectum I think we would like to know whether it was done.

Dr. Francis T. Hunter: It was negative.

Dr. Townsend: The blood is essentially normal, except for some leucocytosis. This would suggest that whatever the malignant disease was, it was not an ulcerating lesion of the gastrointestinal tract from which he had been losing blood. The leucocytosis might go with any sort of malignant disease and helps us very little. The stools were negative. That is important. It again points away from an ul-

cerating lesion of the gastrointestinal tract. I doubt whether we can place much emphasis on the single basal metabolic rate under these conditions.

DR. HUNTER: It was taken three times. Forty was the highest.

DR. TOWNSEND: The description of the chest x-ray is that of a bronchiogenic carcinoma, tumor in the chest. May we see the films at this point?

DR. AUBREY O. HAMPTON: He had, as we stated, this definite elevation of the diaphragm on both sides with costophrenic angles which were very narrow and we could not be sure whether they were obliterated by fluid or pressure elevation of the diaphragm from below. The right lung is essentially clear. The left base is a little more radiant than usual and we interpreted this small area as the size of the upper lobe, thinking that perhaps this was the septum more or less on edge. We do not usually see the septum on the left side in the posterior-anterior view but we thought it was possible that there was distortion. We thought this represented the upper lobe.

DR. TOWNSEND: Presumably the tumor mass interfered with aeration and resulted in collapse of the upper lobe.

DR. HAMPTON: The peripheral portion could be due to fibrosis secondary to an inflammatory process. The difficulty in making out collapse was that the heart was not displaced. Yet we had to assume that the lobe was reduced in size and that there was a mass that infiltrated outward and was consistent with malignancy.

Six hundred R of deep therapy front and back to the chest, that is a lymphoma dose, was given for the purpose of differential diagnosis and there was a slight but definite reduction of the mass but not so much as we would expect if it were lymphoma.

DR. TOWNSEND: It does not look as if there were an appreciable amount of fluid in the chest.

DR. HAMPTON: No, there is a little haziness but not enough for fluid.

DR. TOWNSEND: And while it resembles the picture of bronchiogenic carcinoma it is not absolutely characteristic.

DR. HAMPTON: No, it is not characteristic without the mediastinal displacement to the left. There is also a shadow here which may be an enlarged gland.

DR. TOWNSEND: I should assume that the elevated diaphragm was due to the very large liver.

I wonder if Dr. Hampton can tell us about the duodenum. The statement that "the mucosa looks slightly infiltrated by an annular mass" is an unusual one for an x-ray interpretation.

DR. HAMPTON: The impression that I got from fluoroscopy did not check so well with what we obtained on the films. This is the duodenum here and here. As I viewed the stomach and duodenum everything was moving except the first portion of the duodenum and that did not change at all. It was as though fixed; no muscular activity whatsoever and although it had the appearance of an ulcer projecting upward I felt that it might just as well be a pressure defect from without. Then we obtained relief films of that same area which I am quite sure I did not interpret correctly but in view of the fact that there was no muscular activity I thought it must be an extrinsic lesion. Dr. Martin corrected me and very quickly said that it was an ulcer and he said there was another one which was healed. I think this is the healed ulcer and this the active ulcer, this in front and this behind—two ulcers there, with my observation, which was correct, that the duodenum did not change in shape at any time.

DR. TOWNSEND: We have seen the comparisons of the two chest films, before and after treatment. It seems as if there was slight reduction in the shadow of the tumor mass, as the x-ray reports say, but not so much as we would expect if it were a radiosensitive lymphoma or lymphosarcoma in the chest.

Looking back over some of the important findings, the outstanding feature is the very large liver which is described as stony hard and nodular. I think we must build our diagnosis around that. There are very few conditions except metastatic malignancy that will produce a liver like that. About 90 per cent of such tumors would be carcinoma arising in the drainage area of the portal system, stomach, duodenum, pancreas, or some portion of the colon or rectum. Another tumor that commonly produces such a liver, and might do so in a man of this age, is one of the melanotic sarcoma group which sometimes arise in the back of the eye. Here we have a description of the eyes as normal and no reference to any nodules in the skin. Other types of sarcoma, either of bone or connective tissue origin, would not be apt to produce such extensive liver involvement and the primary focus would probably be obvious. Besides the evidence of malignancy in the liver we have an abnormal mass in the chest which to some extent resembles a bronchiogenic carcinoma but we have no symptoms in the history; no cough, no hemoptysis. One would expect that such symptoms would be prominent in the early history of such a disease. The other common tumor in the chest would be a lymphosarcoma. I doubt very much whether this lesion is the primary lesion. If it were either a bronchiogenic carcinoma or a lymphosarcoma I doubt if it would produce a liver such as is described here. That is not the usual manner of metastasis of such cases. Lymphoma might produce a large liver but very seldom a nodular liver as described here. The bronchiogenic carcinoma usually gets

into serious trouble with the primary lesion before it produces any such metastatic picture. Added to this we finally have jaundice. I do not think that should influence us very much in the decision, because at least half of the patients with a liver like this will develop jaundice before they die, the jaundice being due in most cases to involvement of glands in the portal fissure of the liver. I think that the nodules in the liver might produce distortion of the duodenum. Primary carcinoma of the duodenum does occur, but it is rare; and when it occurs it usually starts near the opening of the bile duct and is apt to produce jaundice early in the game instead of later as here.

I am going to venture the opinion that both the liver and the chest lesions are metastatic, and that we do not know where the primary lesion is; that it is in one of the "silent" areas in the abdomen, very possibly the pancreas. It might be in some portion of the colon where it did not show by x-ray. We know that does happen from time to time, a favorite place being the junction of the sigmoid and rectum beyond the reach of the examining finger.

I do not think syphilis of the liver would produce this picture. I do not think that mass in the chest can be an aneurysm. The aorta was visible, quite distinct from the chest mass. I do not think there is clear evidence pointing to where the primary site of the tumor is, but there is a suggestion from the symptoms that it may be in the lower part of the large bowel.

Clinical Discussion

Dr. Hunter: This patient was one that I took care of. I came to the same conclusion Dr. Townsend did. We suffered under the affliction of having too much information. The medicine that was given was Fowler's solution. The blood examination was 14,000 with 10 per cent myelocytes. He was sent in with a probable diagnosis of myeloid leukemia but on examination he had a nodular liver. I have never seen that with myeloid leukemia.

Dr. Townsend: The absence of anemia practically excludes leukemia.

Dr. Hunter: Not necessarily. I saw a patient this morning with a leukemia with a red count of eight million. The absence of enlargement of the spleen is against it. When the patient got here he had a white cell count of 20,000 with occasional myelocytes. Then came this metabolic rate. It was very high and it was checked several times. There is very little doubt about its correctness. Although such a finding is unusual I found that certain men had heard of high metabolism in general carcinomatosis.

Finally, the lung did not fit into any picture I had ever seen in leukemia, but on the hope that he might have some type of radiosensitive malignancy he was referred to x-ray where we gave him this trial which obviously demonstrated that the tumor was resistant. I have not seen so high an icteric index with metastatic carcinoma of the liver, but that is what our final diagnosis was. We did not know where the primary site was.

Dr. Donald S. King: I can remember three other cases whose x-ray films showed a triangular shadow at the root of the lung similar to that shown in the films of this patient. These cases all proved to be bronchiogenic carcinoma. In view of this fact, I would say that the x-ray under discussion is characteristic of carcinoma of the bronchus with beginning atelectasis. It is true also that we have had a number of cases all of whose symptoms were caused by the metastasis with no symptoms from the pulmonary lesion.

My guess in this case would be primary carcinoma of the bronchus with metastases to the liver.

Dr. Townsend: Have you ever seen as extensive metastases to the liver as these, from bronchiogenic carcinoma?

Dr. King: I remember no such extensive liver metastasis as the one in this case and do not know whether Dr. Mallory remembers any livers of this size. We have, however, had a number of instances of metastases to the liver as well as to the adrenals, brain, etc.

Clinical Diagnosis

Carcinoma of the liver.

Dr. J. H. Townsend's Diagnosis

Metastatic carcinoma of the liver and mediastinum.

Anatomic Diagnoses

Bronchiogenic carcinoma, left upper lobe.
Metastases to regional, mesenteric and retroperitoneal glands, liver and bone marrow.
Icterus.
Duodenal ulcers, acute, with hemorrhage.
Ascites, slight.
Hydrothorax, left slight.
Arteriosclerosis, slight: aortic, coronary, renal.

Pathologic Discussion

Dr. Mallory: At the time of the autopsy we were just as vague as to where the cancer was primary as the clinicians had been. We found of course an enormous liver which was studded with metastases throughout its entire length, right and left lobe uniformly; no single tumor greater than two centimeters in diameter, many of them down to a millimeter in size. It did not seem probable that a cancer arising primarily in the liver could distribute itself throughout the liver so diffusely as that without invasion of the hepatic veins, and we did not

find that. We found, as Dr. Martin predicted, two ulcers in the duodenum, one in the anterior and one in the posterior wall. One of these had become firmly adherent to the liver and the inferior surface of the liver practically formed the base of the ulcer, I think in that way explaining the lack of peristalsis. The left upper lobe of the lung was somewhat contracted and as we cut down the bronchi we found a large tumor mass involving the bronchial glands and completely surrounding the main bronchus of the left upper lobe but not involving its mucosa. The bronchus was apparently narrowed from external pressure but still patent so that we felt unable to make a diagnosis of primary bronchiogenic carcinoma. When the sections came through, however, we found that a small branch of the second order did show complete occlusion with tumor. I think it is entirely consistent with bronchiogenic carcinoma and I have no doubt that that was the primary focus. The two ulcers in the duodenum are perfectly benign ulcers.

DR. TOWNSEND: The main mass that showed in the chest was due to glands?

DR. MALLORY: Yes, particularly surrounding the bronchus to the upper lobe, but also some of the hilus glands as well.

DR. HUNTER: Did the bone marrow show anything?

DR. MALLORY: Multiple metastases.

DR. HUNTER: That explains the high count, the myelocytes.

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GLAUCOMA—A MAJOR HAZARD TO EYESIGHT

THE man in the street to-day places increasing confidence in his medical advisers and in the various health agencies which together have waged an unremitting educational campaign against the major hazards to life.

It is accepted that such educational campaigns provide the most effective route to early diagnosis and to effective treatment, without which there can be no adequate control of cancer, tuberculosis, diphtheria or other major hazards to life.

The greater hazards to the senses of sight and hearing have as yet no champion to organize educational campaigns which reach down to the rank and file. Salvage of sight or hearing for the average man is too often fortuitous, and too often comes too late to be effective. The medical practitioner should never forget that conservation of the sight of his patient is as truly his responsibility as the conservation of the life of his patient. The most influential unit in any sight conserving program is the alert family physician.

Glaucoma is a major hazard to eyesight, and causes about one-third of all blindness arising after the fortieth year. There are two chief types of glaucoma, acute and chronic. *Acute* glaucoma needs no herald to announce its presence, for there is rapid loss of central vision, severe ocular pain uncontrolled by opiates, nausea and vomiting. Fortunately, acute glaucoma is the less frequent type, and prompt treatment by iridectomy usually saves central vision. Acute glaucoma then compares as a surgical emergency with a ruptured appendix, and the family physician is remiss in his duty if he fails at once to engage a competent eye surgeon to handle the emergency.

Chronic glaucoma is a different creature entirely. Its onset is insidious. There is no pain in the eye, and no remote symptoms in the central nervous system. Central vision is spared until very late in the disease, so that the patient may easily read the finest print at the time when nearly the entire visual field is irretrievably lost. While it frequently involves both eyes, the involvement of one eye precedes that of the other, and the nasal field defect of the more diseased eye is masked by the overlapping intact field of the less diseased eye.

There is no pathognomonic sign or symptom of chronic glaucoma. There may be prismatic halos around bright lights, a slight blur of vision in the morning passing away by noon, a difficulty in sustaining focus in reading, a somewhat dilated and sluggish pupil, a delayed or deficient ability of the eye to dark adapt, all coefficients to the extent and duration of abnormally increased intraocular pressure. On the other hand, there may be no symptoms whatever, but yet all the damage of glaucoma may be present in an eye which has a structurally weak optic disc which easily gives way to slight pressure increases. The chief damage from glaucoma is from stretching and death of the optic nerve fibers as the optic disc is cupped under increased ocular pressure.

The diagnosis of chronic glaucoma requires three legs to stand upon:

1. Glaucomatous cupping of the disc.
2. Increased ocular pressure as measured by the tonometer.
3. Glaucoma field defects verified on the perimeter.

Of the three abnormalities, the glaucoma field defect is the most informative and the most reliable. These defects, the nasal step and the co-extension of the nasal field defect with the blind spot of Mariotte, indicate that the tissues of the optic disc are too weak to withstand the ocular pressure, at whatever level that pressure may stand. One must be acquainted with similar defects caused by blocking of either superior or inferior temporal retinal artery.

A frank diagnosis of glaucoma is frequently masked by the presence of cataract, which is a frequent sequel to glaucoma. If cataract is merely a senile degeneration of the lens, it is justified to wait for ripening before attempting surgical extraction. If cataract is secondary to glaucoma, delay for any reason to lower the ocular pressure to a safe level results in incurable loss of sight.

The alert medical practitioner will always have glaucoma in mind when he is dealing with patients past the fortieth year, since glaucoma occurs with increasing frequency after forty. He will seek a qualified ophthalmological opinion about his patients who have entered this danger zone. He will expect in the report from the ophthalmologist a statement about the optic disc, the ocular pressure as measured by a tonometer, and about the condition of the visual fields. He will know that no qualified ophthalmologist would fail to report these fundamental facts from his examination of any patient over forty years of age.

CANCER

The Commonhealth

THE last issue of Volume 21 of *The Commonhealth*, the quarterly bulletin of the Massachusetts Department of Public Health, is devoted to a discussion of cancer, with many short but comprehensive articles by competent surgeons of various phases of this disease. In his foreword Dr. Henry D. Chadwick, Commissioner of Public Health, points out that the new policy of cancer control of the Massachusetts Department of Public Health has been perfected through the joint coöperation of the Department, the Cancer Committee of the Massachusetts Medical Society, the Massachusetts Branch of the American Society for the Control of Cancer, and many individual physicians and surgeons in the State.

This policy is based on the thesis that the practicing physician is the keyman in the cancer control movement, for it is he who will first see the cancer case, must educate his patients to detect the early signs of the disease and must be the guide to adequate therapy. Group study is necessary in the diagnosis of cancer and the outlining of methods of treatment, and the State-aided Cancer Clinics in Massachusetts are prepared to furnish this advice as a consultation service for the physician.

Lay cancer committees in each town are to be known as the Coöperative Cancer Control Committees, and these will arrange meetings in small groups and invite the local physicians to discuss with them the subject of cancer.

Following are thirty-one articles on the subject of cancer, ranging from discussions of detailed and specific types of the disease in various locations to descriptions of the organization of cancer clinics, social service in cancer work and historical trends in cancer.

The Massachusetts Medical Society

THE ANNUAL MEETING

THE amended program of the Annual Meeting of the Massachusetts Medical Society, as published in the *Journal* of last week, has been sent to the Fellows.

The preparation of this document has engaged the attention of the members of the Committee of Arrangements. It warrants careful study because it sets forth a well-devised scheme for the presentation of many of the important phases of modern medicine.

In reading this program one may plan his time to advantage so as to select papers and demonstrations which will supply the information particularly useful to him.

The motion picture demonstrations will be especially attractive and the scientific exhibits will present advanced work on the important phases of disease. Such exhibits have been regarded as of great educational importance and warrant the expenditure of adequate time.

The Annual banquet is the important social occasion of the Meeting. The after-dinner speaking will be of a high order, for President Robey has acceptances from His Excellency, Governor Curley, one of the prominent and effective orators of the present day; His Honor Mayor Mansfield of Boston, who has been confronted with some of the perplexing problems of Boston and has shown keen interest in the welfare of its citizens; Mr. Roscoe Pound, Dean of the Harvard Law School, noted for his profound knowledge of law, who is well aware that doctors know little of law and are only superficially interested in the details of that profession except when obliged to appear in court. With his reputation for wit as well as wisdom he will surely provide entertainment as well as instruction. The Rev. Phillips Endicott Osgood, too, is noted for his delightful sense of humor in dealing with human affairs and will, according to his custom, include in his address the resources of the after-dinner speaker; and Dr. Douglass V. Brown, Assistant Professor of Economics of Harvard University, who can advise the medical profession on those subjects which are of importance under existing conditions. In this group, each is well fitted to instruct and entertain the Fellows and their guests and everyone who can be spared from professional duties should arrange to hear these eminent men.

William Edward Gallie, M.D., F.A.C.S., F.R.C.S. (England), Professor of Surgery of the University of Toronto Faculty of Medicine,

in the Shattuck Lecture will bring to our people his extensive knowledge of the surgical problems to which he has devoted his attention for several years.

The Commercial Exhibits are also of educational value, for they display the practical illustration of the employment of science and art in the practice of medicine.

An attractive feature of the Meeting, is the program for the entertainment of the wives of members. This has been prepared by a Committee of Ladies under the direction of Mrs. W. H. Robey, and it is hoped that there will be a response in the presence of a large number of ladies. This program should be submitted to the families of the doctors in order that the ladies may be fully informed of the plans for their entertainment. The effect of this program may be to lead to the formation of an Auxiliary Society of ladies which has been endorsed by several State Societies, and in some places has coöperated with the physicians effectively in carrying on public health policies.

This Annual Meeting, in the scope and quality of the proceedings, has never been exceeded in Massachusetts and great credit is due the Committee in charge and the several Sections. The Fellows will find these three days a delightful vacation period.

The attention of the Fellows is called to the attractive features of the non medical portion of the program. First, the remarkable color slides and motion pictures of Mexico to be shown Monday evening. During the past month, these pictures have been shown several times to large audiences and have been enthusiastically received.

Secondly, at the request of the Massachusetts Medical Society, the Boston Physicians Art Society is holding a Hobby Show to exhibit various handicrafts of some of its members. This exhibition will be held in Parlor C of the Hotel Statler at the Annual Meeting June 3 to 5.

This group hopes to stimulate an interest in the creative arts and crafts among physicians and thereby gain new members. Anyone interested may communicate with Mr. Ballard at the Boston Medical Library, 8 Fenway, Boston. Members of the Massachusetts Medical Society who wish to express their artistic ability or develop their hobbies are eligible for membership.

A cordial invitation is extended to physicians who may be interested in seeing what their confreres are doing with their leisure time.

Finally, there will be a splendid Golf Tournament at the Belmont Springs Country Club which will conclude what your Committee hopes will be the best Annual Meeting of the Massachusetts Medical Society yet arranged.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

PEMBERTON, FRANK A. S.B., M.D. Harvard University Medical School 1909. F.A.C.S. Clinical Professor of Gynecology, Harvard Medical School. Surgeon in Chief, Free Hospital for Women, Brookline. Address: 198 Commonwealth Avenue, Boston, Massachusetts. Associated with him is

LOCKWOOD, JOHN S. A.B., M.D. Harvard University Medical School 1932. Assistant in Surgical Research, Presbyterian Hospital, New York. Address: Free Hospital for Women, Brookline, Mass. Their subject is "Abnormal Bleeding in Women After the Age of Fifty." Page 1017.

BALBONI, GERARDO M. M.D. Harvard University Medical School 1904. Associate Physician, Massachusetts General Hospital. Physician, Home for Italian Children. His subject is "The Development in the Treatment of Pulmonary Tuberculosis from 1696 to the Present Time." Page 1020. Address: 133 Blackstone Street, Boston, Massachusetts.

NISSEN, H. ARCHIBALD. A.B., M.D. Harvard University Medical School 1916. Formerly, Assistant Physician, Robert B. Brigham Hospital. Member of the Staff and Visiting Physician, New England Deaconess Hospital. Assistant Physician, Palmer Memorial Hospital. Former Instructor in Medicine, Harvard Medical School. Member of American Association for the Control and Study of Rheumatic Disease. His subject is "Arthritis and Tonsillar Infection." Page 1027. Address: 205 Beacon Street, Boston, Massachusetts.

BERGLAND, JOHN M. B.S., M.D. Johns Hopkins University School of Medicine, 1904. F.A.C.S. Acting Obstetrician-in-Chief, Johns Hopkins Hospital. Acting Professor of Obstetrics, Johns Hopkins University. His subject is "Obstetrical Complications." Page 1033. Ad-

dress: 1014 St. Paul Street, Baltimore, Maryland.

DAVIS, MICHAEL M. A.B., Ph.D. Director of Boston Dispensary, 1910-20. Secretary of Committee on Dispensary Development, 1920-27. Director for Medical Services, Julius Rosenwald Fund, Chicago, 1929-. Member of Consultant Staff of the Committee on Economic Security, 1934-35. Chairman of the Council of the American Hospital Association. Address: 4901 Ellis Avenue, Chicago, Illinois. Associated with him is

KROEGER, GERTRUD. Ph.B. and M.A. (University of Chicago); Dr. rer. pol. (University of Berlin). Medical Social Work and Research in Maternal Hygiene; Michael Reese Hospital, Chicago, Ill., 1926-30. Study of Employment Offices in Germany; University of Chicago and U. S. Department of Labor, Bureau of Labor Statistics, 1931. Research, Health Insurance and Medical Economics; Julius Rosenwald Fund, 1934-. Address: 4901 Ellis Avenue, Chicago, Ill. Their subject is "Recent Changes in German Health Insurance Under the Hitler Government." Page 1037.

MATZ, PHILIP B. See This Week's Issue, page 894, issue of May 9, for record of author. His subject is "A Study of Heart Disease Among Veterans. IV. An Analysis of the More Frequent Types of Anatomic Heart Disease." Page 1042.

The Massachusetts Medical Society

ANNUAL MEETING OF THE COUNCIL

The annual meeting of the Council will be held in the Georgian Room of the Hotel Statler, Boston, on Tuesday, June 4, 1935, at 12 o'clock, noon.

Business:

1. Reading record of last meeting in abstract.
2. Nominating Committee retire to deliberate.
3. Report of Committee on Membership and Finance.
4. Reports of committees to consider petitions for restoration to the privileges of fellowship and new committees to be appointed.
5. Report of the Treasurer.
6. Reports of Standing Committees and Special Committees.
7. Election of Officers and Orator by ballot.
8. Appointment of committees for ensuing year, both Standing and Special.
9. Incidental business.

ALEXANDER S. BEGG,
Acting Secretary.

Boston, May 28, 1935.

Councilors are asked to sign one of the two attendance books before the meeting.

SECTION OF OBSTETRICS AND GYNECOLOGY*

THOMAS ALMY, M.D., *Chairman,* 140 Rock Street, Fall River, Mass.

C. J. KICKHAM, M.D., *Secretary,* 524 Commonwealth Avenue, Boston, Mass.

THE USE OF TRANSILLUMINATION IN THE DIAGNOSIS OF BREAST TUMORS

THE basis for the use of transillumination of breast tumors rests upon the opacity of various tissues and media to the light rays. A solid tumor is opaque to the rays, that is, the rays do not penetrate it. A cyst with clear serous contents is much less opaque and allows the transmission of light. Blood is very impermeable and a cyst containing hemorrhagic fluid gives a more or less characteristic dense shadow. Because of the opacity of blood, it is sometimes possible by transillumination to demonstrate the site of small intraductal papillomas. It is also possible to get some information by transillumination as to the character of the growth, a neoplasm showing ill-defined invasive outlines in contrast to the sharper outlines of benign cysts and adenofibromas. The so-called chronic mastitis, e.g., the diffusely shotty breast, gives a diffuse opacity much less marked than that of tumor tissues.

There are certain precautions to be observed in the use of transillumination:

1. Small atrophic breasts closely applied to the breast wall are not suitable.
2. Transillumination must be done in an absolutely dark room. Darkening the ordinary room is not sufficient.
3. The intensity of the source of illumination must be variable. It is a frequent source of error to obscure the shadow by over-illumination of the surrounding tissues. In this connection it must be borne in mind that a colloid carcinoma in which the stroma is scanty and the mucinous material predominates may not be opaque.
4. Sufficient time (3-5 minutes) must be allowed in the dark room to permit accommodation of the pupils before transillumination is attempted.

It must be remembered that like many other diagnostic aids, the value of the procedure depends upon correct interpretation of what one sees, which comes only with experience.

*A series of short selected articles by members of the Section will be published weekly.
Comments and questions by subscribers are solicited and will be discussed by members of the Section.

MISCELLANY

PROSECUTIONS BY THE DEPARTMENT OF AGRICULTURE

Hart M. Allen Laboratories, Los Angeles, Calif., shippers of "Allen's Rheumatic Treatment" were fined $600 in Federal court at Los Angeles. The information as filed alleged that this firm had shipped its product under a label carrying claims of benefit in rheumatism, neuritis, sciatica, lumbago, gout, toothache, earache, migraine, pains of locomotor ataxia, fever, and women's ailments. The "treatment", consisting of approximately five grains of acetanilid per tablet, with small amounts of baking soda and caffeine, was essentially an analgesic, and would have no effect upon the course of the ailments listed. The claims were therefore held to be false and fraudulent and in violation of the law.

Roma Extract Co., Boston, Mass., solution of citrate of magnesia containing Epsom salts, fine $10; Safe Owl Products Co., Brooklyn, N. Y., camphorated oil in two lots, one of which did not conform to the legal standard for that article, and both carrying false and fraudulent medicinal claims, fine $75; and the Universal Merchandise Co., Chicago, Ill. (Martin, Harry and Alfred Gottsegen), "Epsom Salt Tablets" owing their effect to other cathartics, fine $50.

The sporadic occurrence of lead in foods entering interstate commerce requires constant vigilance, say law-enforcement officials. During April, lead in amounts dangerous to health was found in tea, 60,000 pounds being seized; in jams and jellies, of which 1,000 cases were seized; and on fresh apples, as a residue from insecticidal sprays, with 380 bushels seized. Eleven hundred sacks of dried apple chops adulterated with both lead and arsenic were also confiscated.

Among drugs, the Food and Drug Administration reports the seizure of five cylinders of nitrous oxide, a gas used for anesthesia, for failure to meet the official standard of purity. A shipment of "aconite and bryonia compound tablets" was seized because it did not conform to its own stated strength, being in fact practically inert medicinally.

The following "patent" medicines were seized during April because of the false and fraudulent medicinal claims indicated: "A—I—R" (Asthma Instant Relief) for asthma, croup, bronchitis and hay fever; "Baker's Cough Syrup" for coughs, hoarseness, influenza, bronchitis, croup, whooping cough and inflammations of the throat and lungs; "Blanton's Rheumatic Salve" for rheumatism, coughs, pneumonia, sore joints, swollen muscles and catarrh; "Chalgonia Tablets" for insomnia and sciatica; "Fowlerine" for kidney trouble, rheumatism and nervousness; "Dr. Griggs Great Blood Tonic" for diseases of the blood, nervous system, liver, kidneys, bladder, stomach and heart, and women's ailments; "Hale Phosphate of Soda" for stomach and liver derangements and rheumatism; "Hart's Swedish Asthma and Hay Fever Medicine" for asthma and hay fever; an ichthyol ointment for eczema and carbuncles; "J. H. Mims Iron Tonic" for purifying the blood and for indigestion, pellegra, dropsy, eczema and rheumatism; "Mother's Salve" for croup, catarrh, piles, sores and skin diseases; "Nurse Brand Blood Purifier" for skin affections and sluggish liver; "Requa's Charcoal Tablets" for all stomach troubles, rheumatism, constipation, liver trouble and malaria; "Revigoro Tonic Health Tea" for the restoration of organ, gland and tissue, and for weight reduction; "Roo-Mo-Rub" for rheumatism, sciatica, lumbago, and scarlet, typhoid and other fevers; "Thymol Powder" for female disorders; and "Vin Vigorans", a nerve and blood tonic.

FURTHER RECOGNITION OF THE WORK OF DR. GEORGE R. MINOT AND DR. WILLIAM P. MURPHY

On Thursday, May 23, 1935, the Humane Society of the Commonwealth of Massachusetts presented a gold medal to Dr. George R. Minot and one to Dr. William P. Murphy "in recognition of their successful discoveries in the treatment of pernicious anemia."

Mr. Charles P. Curtis, President of the Society, presented the medals under the provision of the fifth clause of an Act of the Legislature enacted in 1791, incorporating the Society.

The clause provides:—"that the end and design of the institution of the said society, is for the recovery of persons who meet with such accidents as produce in them the appearance of death, and for promoting the cause of humanity by pursuing such means from time to time, as shall have for their object the preservation of human life and the alleviation of its miseries."

AN ALLEGED CURATIVE TREATMENT OF TUBERCULOSIS AND OTHER DISEASES

At a meeting held in the State Tuberculosis Sanatorium, Uncas-on-Thames, Connecticut, Dr. Stephen J. Maher, Chairman of the Connecticut Tuberculosis Commission, reported the cure of "hundreds of cases" of asthma and successful results in the treatment of epilepsy, dementia praecox, and chorea by the oral application of the progeny of the avian tuberculosis bacillus.

In addition he claimed that other substances prepared from the killed progeny of human and bovine tuberculosis bacilli possess "demonstrable but differing curative powers over early and late cases of pulmonary tuberculosis in human beings."

The reactions to these claims as reported by the *New York Times* provoked a heated discussion.

Dr. Iago Galdston of the Medical Information Bureau of the New York Academy of Medicine has commented on Dr. Maher's report as follows:

"The announced cures for so wide a variety of conditions is most startling. However, there have been in the past so many similar announcements which time has shown to be so markedly premature that

all we can say at the present time is we hope they are correct.

"But we shall have to wait until there is corroborative evidence in science. The burden of the proof lies very much with the claimant.

"In epilepsy and dementia praecox we have two conditions, which up to the present time have baffled the best brains in medicine. Furthermore, as we know to-day, epilepsy is not a definite disease condition, but is rather a symptom associated with a variety of underlying conditions for which it is improbable that there might be a specific remedy."

Dr. John A. Hartwell, director of the Academy of Medicine, stated that he "endorsed Dr. Galdston's statement completely and emphatically."

Further comment seems superfluous.

THE APPOINTMENT OF DR. MYERSON

Dr. Abraham Myerson has been appointed to the position of Clinical Professor of Psychiatry at Harvard University.

Dr. Myerson graduated from Tufts College Medical School in 1908 and has served as Fellow in Psychiatry and assistant in Neuropathology at the Harvard Medical School.

He has been prominent in his chosen field for many years as a consultant, and his opinions have been sought in important legal cases.

HOSPITALS IN THE NEW YORK PLAN FOR HOSPITAL CARE

The total number of hospitals in the three-cent-a-day plan for hospital care in the New York group is now 109.

This experiment warrants careful study by other cities for, if successful, it will be of advantage to hospitals and patients.

THE FIRST APPLICATION OF THE ANTIRABIC INOCULATION

Joseph Meister, now a helper in the Pasteur Institute of Paris was given the antirabic treatment devised by Pasteur, July 18, 1885, after having been bitten by a dog suffering with rabies.

The treatment was given by Dr. Grancher under Pasteur's supervision, because it was required by law that only physicians could practice medicine.

That demonstration has saved the lives of countless numbers of persons, for this treatment is a recognized resource in dealing with rabies.

THE AWARD OF THE LESLIE DANA GOLD MEDAL

The Leslie Dana Gold Medal, awarded annually for outstanding achievements in the prevention of blindness and the conservation of vision, will be presented this year to Dr. William H. Wilder of Chicago, it is announced by Lewis H. Carris, managing director of the National Society for the Prevention of Blindness. Dr. Wilder was selected for this honor by the National Society in coöperation with the St. Louis Society for the Blind.

The medal, offered annually by a director of the St. Louis Society, is a prized mark of recognition of service for the conservation of vision. It was presented to Dr. Wilder at ceremonies in St. Louis on May 18. The medal bears the inscription: "Wise Clinician, Devoted Teacher and Humanitarian."

Dr. Wilder is secretary-treasurer of the American Board of Ophthalmology; vice-president of the Illinois Society for the Prevention of Blindness; professor emeritus of ophthalmology at Rush Medical College, University of Chicago; and a past president of the American Academy of Ophthalmology and Otolaryngology.

The Leslie Dana Medal was awarded last year to Professor F. de Lapersonne of Paris, president of the International Association for Prevention of Blindness.

A MEMORIAL TO THE MEMORY OF JANE TODD CRAWFORD

The Kentucky State Medical Association has issued invitations to attend the dedication of a monument to Jane Todd Crawford, Heroine of the First Ovariotomy, May 30, 1935, at McDowell Park, Danville, Kentucky.

HEALTH OFFICERS' MONTHLY STATEMENT OF VENEREAL DISEASES REPORTED

MARCH, 1935

This statement is issued monthly for the information of health officers in order to furnish current data as to the prevalence of the venereal diseases. The following reports were received from State Health Officers. The figures are preliminary and subject to correction. It is hoped that this will stimulate more complete reporting of these diseases.

The situation in the New England States appears below.

State	*Syphilis*		*Gonorrhea*	
	Cases reported during month	Monthly case rates per 10,000 population	Cases reported during month	Monthly case rates per 10,000 population
Connecticut	179	1.09	118	.72
Maine	40	.50	37	.46
Massachusetts	556	1.29	513	1.19
New Hampshire	14	.30	11	.23
Rhode Island	95	1.35	57	.81
Vermont	19	.53	23	.64

—Treasury Department, Public Health Service.

RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS FOR APRIL, 1935

MONTHLY REPORT FOR APRIL, 1935

Disease	Apr., 1935	Apr., 1934	5 Yr. Average*
Anterior Poliomyelitis	1	1	3
Chicken Pox	1081	1001	1014
Diphtheria	26	59	146
Dog Bite	1103	654	554
Cerebrospinal Meningitis	9	8	10
German Measles	8695	70	400
Gonorrhea	508	431	471
Lobar Pneumonia	539	532	515
Measles	2156	9138	4434
Mumps	486	549	859
Scarlet Fever	1029	1000	1534
Syphilis	498	389	362
Tuberculosis, Pulmonary	315	258	359
Tuberculosis Other Forms	33	33	49
Typhoid Fever	13	8	11
Undulant Fever	6	0	
Whooping Cough	522	1634	1064

*Based on the figures for the preceding five years.

RARE DISEASES

Anterior poliomyelitis was reported from Millbury, 1.

Dysentery (Amebic) was reported from Worcester, 1.

Dysentery (Bacillary) was reported from Worcester, 5.

Encephalitis lethargica was reported from Sutton, 1.

Malaria was reported from Newton, 1.

Epidemic cerebrospinal meningitis was reported from Avon, 1; Fall River, 2; Holyoke, 1; Lawrence, 1; Leominster, 1; Northbridge, 2; West Newbury, 1; total, 9.

Pellagra was reported from Attleboro, 1.

Septic sore throat was reported from Boston, 8; Cambridge, 1; East Bridgewater, 1; Fall River, 6; Fitchburg, 1; Foxboro, 1; Greenfield, 2; Lowell, 2; Lynn, 1; Medford, 1; Northfield, 2; Tyngsboro, 1; Waltham, 2; Williamstown, 2; total, 31.

Trichinosis was reported from Beverly, 1.

Undulant fever was reported from Adams, 1; Hinsdale, 1; West Brookfield, 1; Westfield, 1; Williamstown, 1; Worcester, 1; total, 6.

Diphtheria—In 1907 there was reported a daily average of twenty-six cases—as many as we had for the entire past month.

German measles continues to be reported in epidemic figures greater than ever reported in Massachusetts for these times.

Typhoid fever to date has not shown any decrease over last year.

Scarlet fever, pulmonary tuberculosis, tuberculosis other forms, and whooping cough were reported below the five year average.

Lobar pneumonia, anterior poliomyelitis, epidemic cerebrospinal meningitis, chicken pox and mumps show nothing remarkable.

Undulant fever has been reported twelve times for January through April as compared with two each in 1933 and 1934.

Rabies continues prevalent throughout the eastern part of the State.

CORRESPONDENCE

INFORMATION DESIRED OF AN OPPORTUNITY FOR PRACTICE

4520 Fourth Avenue,
Brooklyn, N. Y.,
May 20, 1935.

Massachusetts Medical Society,
8 Fenway, Boston.

A professional friend has suggested to me that you keep a list of Massachusetts towns needing and desiring a doctor. I am a woman physician, resident of Massachusetts, graduate of the University of Michigan Medical School, with one year's general rotating internship, and one year's residency in pediatrics. I plan to do general practice in a small or moderate-sized town, and I do not object to the country. I expect to be ready to start practice in the late summer or early fall.

Any suggestions you may be able to offer concerning possible locations will be greatly appreciated.

Very truly yours,
MIRIAM J. HOSMER, M.D.

HARVARD UNIVERSITY MEDICAL SCHOOL

Courses for Graduates

POSTGRADUATE FELLOWSHIPS UNDER GRANTS OF THE COMMONWEALTH FUND

May 20, 1935.

Editor, *New England Journal of Medicine*,

It may be of interest to the Fellows of the Massachusetts Medical Society to know that the Commonwealth Fund of New York is again offering postgraduate fellowships for study at the Harvard Medical School.

The qualifications are that applicants must be graduates of grade "A" medical schools, should not be more than forty-five years of age, must live in towns not more than 10,000 population, and must have been in practice at least five years.

Fellowships are offered in the following courses: medicine, obstetrics, pediatrics and office surgery. Doctors in Massachusetts who are interested in these fellowships may apply to the Commonwealth Fund, 41 East 57th Street, New York City, or to the Assistant Dean, Courses for Graduates, 25 Shattuck Street, Boston.

Yours very truly,
LEROY E. PARKINS.

RECENT DEATHS

PADDOCK — BRACE WHITMAN PADDOCK, M.D., of 435 South Street, Pittsfield, Massachusetts, died at his home, May 22, 1935. Dr. Paddock was born in Pittsfield, August 14, 1878, the son of the late Dr. Franklin Kittredge Paddock and Anna Todd Paddock. His father was President of the Massachusetts Medical Society, 1894-1896. He graduated from Yale University in 1900 and from the Columbia University College of Physicians and Surgeons in 1904, later serving two years at Roosevelt Hospital as house physician and afterward in the same capacity at Sloane Maternity Hospital. On completion of these appointments he returned to Pittsfield and in 1907 was appointed to the staff of the House of Mercy Hospital, Pittsfield, and since 1931 had been the chief of staff.

He joined the Massachusetts Medical Society in 1907 and was a member of the Council. He was also a Fellow of the American Medical Association. He was elected orator of the 1935 Annual Meeting of the Massachusetts Medical Society and because of illness forwarded the manuscript of his address to the President with the notice of his inability to be present. The paper will be read Wednesday, June 5, by his son.

Dr. Paddock had been prominent in Pittsfield medical affairs, and was a past president of the Berkshire District Medical Society. He was assistant director of the Berkshire Life Insurance Company and Surgeon for the Boston and Albany Railroad, a member of the Yale Club of New York and the Pittsfield Country and Riding Clubs. He was especially fond of outdoor life and had enjoyed hunting expeditions in Alaska, Labrador and New Brunswick.

He is survived by his widow, Mrs. Elizabeth (Plunkett) Paddock; a son, Franklin K. Paddock, now a medical student; a daughter, Miss Elizabeth Paddock, and a sister, Mrs. Charles L. Hibbard, wife of Judge Hibbard of Pittsfield.

RICHARDSON — CHARLES HARPER RICHARDSON, M.D., of 344 North Street, Pittsfield, Massachusetts, died at his home, May 21, 1935. He was born at New Ipswich, New Hampshire, in 1869, the son of Samuel and Susan Bancroft Richardson. He graduated from the Albany Medical College in 1897, later serving as instructor in this college and assistant surgeon at the Albany City Hospital.

He settled in Pittsfield in 1903 and five years later established Hillcrest Surgical Hospital, serving as surgeon-in-chief until a year ago when he retired.

Dr. Richardson joined the Massachusetts Medical Society in 1903 and was also a Fellow of the American Medical Association. He had served as President of the Berkshire District Medical Society, and was prominent as an organizer of the Cancer Clinics in Pittsfield. He was a Mason. His principal diversion was golf.

Dr. Richardson is survived by his widow, Mrs. Isabella A. (Akin) Richardson; a daughter, Mrs. Lambert L. Borden of New York City; a brother, George Richardson of San Francisco, and a sister, Mrs. Helen R. Brown of San Diego.

NOTICE

ANNOUNCEMENT

LUCILE LORD-HEINSTEIN, M.D., is resuming the practice of medicine at 402 Columbia Road, Dorchester, Massachusetts.

REPORTS AND NOTICES OF MEETINGS

MASSACHUSETTS TUBERCULOSIS LEAGUE

ANNUAL MEETING, APRIL 29, 1935

Address by Henry D. Chadwick, M.D., State Commissioner of Public Health

It is always a pleasure to meet with the representatives of the League and its local organizations throughout the State. I have listened with interest to the reports made by Dr. Frederick T. Lord, President; Mr. Frank Kiernan, Executive Secretary, and Miss Jean V. Latimer, Educational Secretary. I think they all show substantial progress during the year. The work is going on satisfactorily but we still have things to do. In no other part of the country have the volunteer tuberculosis organizations worked so closely in harmony with the official agencies as in this Commonwealth.

There are now 4,100 beds in public sanatoria available in Massachusetts, but this is not enough although it far exceeds the standard set some years ago by the National Tuberculosis Association of one bed for each annual death. At this time many patients are waiting to gain admission to sanatoria. The number of deaths from tuberculosis is decreasing year by year, but the number of cases reported is on the increase. This does not mean that there are actually more cases of the disease; it indicates that through improved diagnostic methods more cases are being brought to light. Then, also, the doctors are becoming more tuberculosis conscious. In my opinion we will soon reach the peak of reported cases. There is some evidence that points that way.

At the Veterans' Hospital at Rutland, they have set aside 100 beds that were provided for tuberculosis patients, to be used for other diseases, because the number of tuberculosis cases among veterans has shown a marked decline.

The reason why sanatorium beds are now more in demand than ever before is because patients know that they can get the most modern methods of treatment in our institutions. These improved methods of treatment attract the patients, are much more effective, and to a considerable degree have contributed to the decreasing death rate. More tuberculous patients are getting well from their disease than ever before.

With improved case-finding methods it is necessary that we should have an adequate number of beds to take care of the cases as soon as they are discovered. It is useless to find patients unless something can be done for them when they are found. The horn of plenty is being opened up in Washington and we hope will give us means whereby we can have 450 new sanatorium beds in Massachusetts; 250 of these will be replacements, making a net increase of 200, or a grand total of 4,300, which should be enough to take care of all patients promptly.

In 1900 there were 253 deaths per hundred thousand from tuberculosis. This was reduced at the rate of 7 points per year for the next ten years, and in the second decade at the rate of 6 points, the third decade by 5 points, and in the fourth decade it has been reduced by 3 points per year. The rate is now 48 per 100,000. There will come a time when it will be even more difficult to lessen the number of cases per year at the same rate as we are now doing.

By taking out of the community sources of infection we are thereby reducing the number of new cases. We are not propagating tuberculosis as fast now as was done in the past. With less seed planted there will be fewer cases of tuberculosis to require care and treatment in the future.

The National Tuberculosis Association and its affiliated associations have had a lot to do with the successful tuberculosis program which has been carried on for the past twenty-five years. The sustained public interest in tuberculosis activities is very well shown by the continued success of the Christmas Seal sale.

As tuberculosis continues to decrease we will find that the last stages of the conquest of this disease will be the most difficult. This should spur us on to greater efforts, not only to maintain our gains, but to steadily advance the front line of attack. Someone has said that it takes a long time to do a difficult thing but to do an impossible thing takes a little longer.

MASSACHUSETTS TUBERCULOSIS LEAGUE ANNUAL MEETING, APRIL 29, 1935

Address by Dr. Alton S. Pope, Director, State Division of Tuberculosis

About a year before the termination of the Ten Year period which was agreed upon with the Legislature for the state to carry on school clinics, it was decided that in view of the success of the program it would be continued under local auspices. This involved the coöperation of the county and municipal sanatoria, the local school departments, the local health departments, and the voluntary tuberculosis associations. It was felt that under the new arrangement the examination of the children should be carried on in the 7th, 9th, and 11th grades. These grades were selected because out of the experience of ten years we knew that more tuberculosis was found in those grades than in the lower school ages.

I will give a brief résumé of the progress which has been made in the first year of this work under local auspices. In Worcester County, Dr. Edson W. Glidden and his associates and the tuberculosis associations of Northern and Southern Worcester County have done an outstanding piece of work in examining the children in practically all of the county towns. In Middlesex County, Dr. Remick and his associates began the examinations in November 1934 and are doing a thorough job. Not all of the towns will be examined this year because the state clinics worked in a number of the towns in 1933 and 1934. Norfolk County began work about two months ago. Hampshire County has already started and Barnstable County towns were done last fall. Essex County also started x-raying about a month ago. The Plymouth County Sanatorium has recently begun school examinations in that area.

In the western part of the state, Westfield has completed x-raying in Berkshire and Franklin counties and most of the towns in Hampden County. Rutland Sanatorium started x-raying in Fitchburg and is going ahead with Athol and Gardner. Lakeville Sanatorium consents are in for towns in Southern Bristol and Southern Plymouth counties. The City of Worcester has taken over its own school work. They began x-raying last fall and the work will be completed by the end of the school year. The testing is done in the schools and the reactors transported to the Belmont Sanatorium. This is done to have the advantage of the x-ray equipment at the hospital. The work in Cambridge, Lowell, Lawrence and Haverhill has been carried on largely by the North Reading Sanatorium.

There is a tremendous field for the voluntary associations in preparing the ground for the school work. No type of clinic work can continue on on its own momentum. Someone must keep up the contact with the Boards of Health and the School Committees. Unless this is done, the interest will lapse in a short time. The success of the work will depend to a considerable extent on the continued active support of the local tuberculosis associations.

In an average period of six to seven years, it has been found that 3 per cent of the children with tuberculosis lesions of the childhood type have developed pulmonary tuberculosis. This rate is four times as high as that found in children with no lesions who reacted to the tuberculin test, and twelve times as high as that found in children with a negative tuberculin test.

The school clinics have brought out the importance of family contact in tuberculosis. The incidence of pulmonary tuberculosis is forty to fifty times as high among children with known family exposure to tuberculosis as among those without known contact. We recently had supplementary information from Dr. Remick which shows the importance of contact among adults and children. Among one hundred and forty-four families it was found that in the age group from infancy to twenty years, 3½ per cent had pulmonary tuberculosis; in the age group twenty to forty, it was found that 12 per cent had pulmonary

tuberculosis; and in the group of forty to sixty years, 15 per cent had pulmonary tuberculosis.

These findings emphasize the importance of going back to the source of infection in every case of tuberculosis found. The school clinic work to be completely effective must do the same thing. This also reaffirms our belief in the desirability of the school clinics and we ask your continued coöperation in developing and strengthening them on the present basis.

NEW ENGLAND PHYSICAL THERAPY SOCIETY

At the Annual Meeting of the New England Physical Therapy Society held at the Hotel Victoria on May 15, 1935, the following officers were elected for the ensuing year:

President: Charles W. McClure, M.D., Boston, Mass.

1st Vice-President: George B. Carr, M.D., Lynn, Mass.

2nd Vice-President: George B. Rice, M.D., Boston, Mass.

Secretary: Arthur H. Ring, M.D., Arlington, Mass.

Treasurer: Franklin P. Lowry, M.D., Newton, Mass.

Councilors for three years: William D. McFee, M.D., Boston, Mass; Edward H. Baxter, M.D., Hyde Park, Mass.

Claude L. Payzant, M.D., of Boston, addressed the Society on "The Problem of Back Strain". A round table discussion followed.

The June meeting of the New England Physical Therapy Society will be omitted to allow the members to attend the program of the Section of Radiology and Physiotherapy of the Massachusetts Medical Society on Monday afternoon, June 3, at 2:30 o'clock, in the Ball Room Assembly of the Hotel Statler. All members are urged to attend this outstanding program.

ARTHUR H. RING, M.D., *Secretary.*

THE NEW ENGLAND ROENTGEN RAY SOCIETY

The April meeting of the New England Roentgen Ray Society was held April 26, 1935, at the Children's Hospital in Boston. The program was presented by Dr. E. C. Vogt, roentgenologist to that hospital.

The society was addressed by Dr. Sidney Farber, Pathologist to the Children's Hospital, who spoke on some aspects of the problem of sudden death in early life. Dr. Farber enumerated some of the causes of sudden death from his experience in conducting postmortem examinations in such cases. Congenital anomalies involving the cardiovascular or respiratory systems may bring about unexpected death in the course of an acute infection. Death may be caused by asphyxia following aspiration of food, milk, or other foreign substances or by fulminating infections due to a variety of organisms and commonly by the streptococcus. The clinical histories in such cases may be erroneous because of a lack of proper observation of the patient. Death may follow an improperly administered anesthetic during a surgical procedure. The speaker took the opportunity of summarizing some of the evidence against the diagnosis "thymic death". From the work of Edith Boyd, Hammar, and the British Commission, which investigated the problem, and from the experience of various workers in the Children's Hospital, it appears quite certain that the diagnosis "thymic death" has no justification. That diagnosis is based upon a misconception of the size of the normal thymus. The various clinical services, the department of roentgenology and the department of pathology at the Children's Hospital take a firm stand on the thymic question. For many years no routine x-ray studies have been made of the thymus and no preoperative radiation of the thymus has been observed in the hospital. In over twenty-two hundred postmortem examinations at the Children's Hospital an adequate cause for death has been found in all cases, including a number where the thymus appeared large. The normal, well-nourished infant or child possesses a large thymus and an abundant amount of lymphoid tissue throughout the body. Dr. Farber made a plea for careful postmortem examinations in every case of sudden death. He expressed the hope that the diagnosis, status thymicolymphaticus, will be dropped in view of data assembled from different parts of the world, and that hospitals and medical men will take a common stand on this vexatious question.

The second presentation was by Miss Vernette Vickers, representing the clinic of Dr. Harold Stuart. In Doctor Stuart's clinic of well babies an attempt is being made to study the normal development of children from many angles. Miss Vickers gave a summary of the knowledge being acquired concerning the ossification of the epiphyses of bones as studied by the x-ray. The children were x-rayed at birth, three months, six months, nine months and one year. Thereafter, they were examined at six months' intervals, and for accuracy always within a day or two of the birthday. During the four years that the study had progressed, 162 children had been selected for examination, about equally divided as to sex. It had become apparent from a tabulation of the results, that there was to be no correlation between the age of the child and the number of visible ossified epiphyses present. In other words, no anatomical age of a growing child could be established on this basis. The order of appearance is always the same in the sexes, although the females tend to be more regular, and the females are usually a few months ahead of the males in the establishment of any given visible epiphysis. All members of the same family followed the same pattern in the appearance of the epiphyses by x-ray. Illness tended to delay the unfolding of the epiphyses but not the order of appearance. Miss Vickers' conclusions on the work so far were that there was a great variation in the time of appearance of any

given epiphysis, and that no conclusions could be drawn from the examination of an individual child except within broad limits.

Doctor Vogt concluded the meeting with a discussion of the problem of congenital dislocation of the hip as presented to the roentgenologist. He pointed out the remarkable change in the outlook of this deformity. Whereas forty years ago congenital dislocation of the hip was regarded as a hopeless condition, a recent analysis of the cases at the Children's Hospital showed a satisfactory result in 78 per cent after reduction. In spite of this advance in the knowledge of treatment very little had been added to an understanding of the cases. Many questions had yet to be solved. Ninety per cent of the cases occur in girls and forty per cent are bilateral. Is the deformity a result of inherent defect in the transmission of the germ plasm, or is a normal germ disturbed by extraneous forces? Apparently heredity has little direct bearing on the appearance of the deformity. The extremities and their joints are completely formed by the end of the second month of embryonic life, and the question then arises as to whether the dislocation is one of primary malformation of the joint or whether the dislocation is the result of forces exerted in the amnion during later fetal life. By definition a congenital dislocation of the hip must be present at birth. Doctor Vogt felt that there was good evidence to believe that some cases of so-called congenital dislocation really occurred after birth. He then brought out the changes to be expected in the acetabulum following dislocation of the head of the femur. He showed serial films of dislocations known to have occurred after birth from such causes as spina bifida. In these cases the acetabulum gradually becomes more and more shallow. With replacement, the acetabulum again gradually assumes its normal depth. Doctor Vogt showed serial films of true congenital dislocation of the hip followed almost since birth. In this condition one should expect the same sequence of events as occurs in the cases of known acquired dislocation. Since dislocation of the hip is rarely suspected in childhood, few x-ray examinations are made until the child begins to walk. No conclusions can be drawn as to the exact time that a dislocation may have occurred from x-rays taken several months after birth. It is felt that the greatest single factor in successful treatment of the condition is early diagnosis.

THE WORCESTER NORTH DISTRICT CANCER CLINIC

A special diagnostic clinical conference was held at Burbank Hospital, Fitchburg, May 15, with Dr. Joe Vincent Meigs, surgeon of Pondville Hospital, as consultant, and members of the Worcester North District Medical Society as guests.

Eighteen cases, including three from the hospital wards, were presented, twelve new clinic patients and three old clinic patients; of the new patients ten were referred by physicians, two by newspapers.

Diagnosis (new patients)	
Cancer, primary	1
Cancer, recurrent	1
Deferred	5
Precancerous lesions	1
Benign tumors	3
Other conditions	1
Old patients changed, deferred, to cancer	1

Members of the District Society are cordially invited to bring or send patients to the clinics for diagnosis and advice as to treatment!

WORCESTER NORTH CANCER COMMITTEE.

Fitchburg, May 20, 1935.

MASSACHUSETTS MEDICO-LEGAL SOCIETY

The Massachusetts Medico-Legal Society will meet Tuesday, June 4, at the Hotel Statler, Boston, at 2:00 P.M.

Dr. Edgar R. Frankish, Medical Examiner for the Province of Ontario, will give an address on the habits and customs of his office. Dr. William F. Boos will speak on "What Is Normal Arsenic?"

FRITZ W. GAY, M.D.,
President.

MYRTELLE M. CANAVAN, M.D.,
Secretary-Treasurer.

THE TWENTY-FIFTH CLINICAL CONGRESS OF THE AMERICAN COLLEGE OF SURGEONS

For the twenty-fifth annual Clinical Congress, October 28-November 1, the surgeons of San Francisco and Oakland have organized under the leadership of a representative committee with Dr. Howard C. Naffziger as chairman, and are preparing a clinical program that will adequately present the surgical activities of that great Pacific coast medical center.

The Congress will open Monday morning at 10 o'clock with the annual hospital conference at the Fairmont Hotel. Clinics at the hospitals are scheduled for Monday afternoon at 2 o'clock, and will be continued during the following four days both morning and afternoon. A comprehensive and varied program of operative clinics and demonstrations representing all departments of surgery is being prepared. This will include a special series of clinics in surgery of the eye, ear, nose and throat. The committee is also preparing programs for four morning sessions at which distinguished ophthalmologists and otolaryngologists will present and discuss subjects of clinical interest.

Programs are being arranged for five evening meetings at which eminent surgeons of the United States and Canada and a number of distinguished visitors from abroad will present and discuss papers dealing with surgical subjects of present-day importance. Plans are being made also for conferences on cancer, fractures, and industrial medicine and traumatic surgery. The president-elect, Dr. Donald C. Balfour, of Rochester, Minnesota, will be inaugurated at the presidential meeting on Monday

evening. At the annual convocation of the College on Friday evening, when the 1935 class of candidates for Fellowship will be received, the Fellowship address will be given by Dr. Robert Gordon Sproul, president of the University of California.

Headquarters will be established at the Fairmont and Mark Hopkins Hotels, the registration and information bureau, scientific and technical exhibitions, executive offices, etc., being located at the former. Ample first-class accommodations are available at nearby hotels. The railroads have authorized low round-trip rates from all sections of the country.

Attendance will be limited to a number that can be readily accommodated at the clinics so that registration in advance is necessary.

GEORGE CRILE,
Chairman, Board of Regents.

MASSACHUSETTS ALUMNI OF UNIVERSITY OF MARYLAND MEDICAL SCHOOL, BALTIMORE MEDICAL COLLEGE, AND COLLEGE OF PHYSICIANS AND SURGEONS, BALTIMORE

The Annual Luncheon-Meeting will be held at the University Club, Boston, Tuesday, June 4, at 12:30 P.M.

Make reservations through Dr. Charles W. Finnerty, 395 Commonwealth Avenue, Boston.

CHARLES E. GILL, M.D., *Secretary.*

AMERICAN RADIUM SOCIETY

ATLANTIC CITY—JUNE 10 AND 11, 1935

Place of Meeting—Vernon Room, Haddon Hall

Monday Morning, June 10, 1935

Symposium on Radium Packs

Chairman, William H. Cameron, M.D., New York

Tissue Doses in Teleradium Therapy. G. Failla, Ph.D., New York.

Advantages and Disadvantages of Radium Packs. Ira I. Kaplan, M.D., New York.

Advantages and Disadvantages of Radium Packs. James J. Duffy, M.D., New York.

Advantages and Disadvantages of Radium Packs. Burton T. Simpson, M.D.; Melvin C. Reinhard (By invitation), Buffalo, New York.

Monday Afternoon Session

Symposium on Biopsies

Advantages and Limitations of Various Types

Chairman, Robert B. Greenough, M.D., Boston

Incisional Biopsy. John M. Hanford, M.D. (By invitation); Cushman D. Haagensen, M.D. (By invitation), New York.

Aspiration Biopsy. Hayes E. Martin, M.D.; Fred W. Stewart, M.D. (By invitation), New York.

Endothermy Biopsy. Grant E. Ward, M.D. (By invitation); Charles Geschickter, M.D. (By invitation), Baltimore.

Tuesday, June 11, 1935

Morning Session

Symposium on Breast Cancer

Chairman, George W. Grier, M.D., Pittsburgh

Indications for Radical Surgery. Hugh Auchincloss, M.D. (By invitation), New York.

Interstitial Radiation. Orville N. Meland, M.D., Los Angeles.

Preoperative Radiation. Frank E. Adair, M.D.; Fred W. Stewart, M.D. (By invitation), New York.

Radiotherapy in Inoperable, Metastatic and Recurrent Cases. A. U. Desjardins, M.D.; Eugene T. Leddy, M.D., Rochester, Minn.

Ovarian Irradiation in Cancer of the Breast. Richard Dresser, M.D. (By invitation), Boston.

Tuesday Afternoon Session

Miscellaneous Problems

Technic of Radium Treatment of Cancer of the Rectum. H. H. Bowing, M.D.; R. E. Fricke, M.D., Rochester, Minn.

Technic of Radium Treatment of Cancer of the Body of the Uterus. Henry Schmitz, M.D.; Herbert Schmitz, M.D. (By invitation), Chicago.

Radium in Primary Carcinoma of the Female Urethra. L. A. Pomeroy, M.D., Cleveland.

Developmental Changes Following Irradiation. William S. Newcomet, M.D., Philadelphia.

Cavernous Angioma; Treatment by Radium and Other Methods. William L. Clark, M.D., Philadelphia.

Vernal Catarrh and Its Response to Radium Treatment. E. P. Pendergrass, M.D.; J. R. Andrews, M.D. (By invitation), Philadelphia.

Diagnosis and Treatment of Malignant Tumors of the Nasal Sinuses. G. A. Robinson, M.D., New York.

THE ACADEMY OF PHYSICAL MEDICINE

ANNUAL MEETING

The Claridge Hotel, Atlantic City, N. J.
June 12 and 13, 1935

PROGRAM

WEDNESDAY MORNING, JUNE 12, 1935

Rose Room

Business Session
9 o'clock

Scientific Session
9:30 o'clock

(1) The Effect of Radium Irradiation on the Electrophoretic Velocity, Viability and pH of Escherichia Coli Suspension. K. Pierre Dozios, M.S., Grant E. Ward, M.D., and Frank Wilson Hachtel, M.D., Baltimore, Md. (Slides will be shown.)

Discussion: Charles Whelan, M.D., Boston, Mass.

(2) Body Mechanics in Relation to Arthritis, a Re-Statement. John G. Kuhns, M.D., Boston, Mass. (Slides will be shown.)
Discussion: Harold D. Corbusier, M.D., Plainfield, N. J., and George E. Deering, M.D., Worcester, Mass.

(3) Present Mode of X-ray Therapy in Malignant Disease. Frederick William O'Brien, M.D., Boston, Mass.
Discussion: George E. Pfahler, M.D., Philadelphia, Pa., Richard T. Powers, M.D., Springfield, Mass., and Herman A. Osgood, M.D., Boston, Mass.

WEDNESDAY AFTERNOON

Rose Room
2 o'clock

The President's Address

William Lawrence Clark, M.D., F.A.P.M., Philadelphia, Pa.
President of the Academy of Physical Medicine

(1) Duodeno-Biliary Drainage with a Discussion of Its Diagnostic and Therapeutic Values. William A. Swalm, M.D., and Charles-Francis Long, M.D., Philadelphia, Pa. (Slides and motion pictures will be shown.)
Discussion: Sara M. Jordan, M.D., Boston, Mass., William H. Watters, M.D., Boston, Mass., and Miami, Fla.

(2) The Therapeutic Effects of Short Wave Ultra-Violet Radiation in Dermatological Practice. Francis P. McCarthy, M.D., Boston, Mass.
Discussion: Francis M. Thurmon, M.D., Boston, Mass., and Franklin P. Lowry, M.D., Boston, Mass.

(3) Radiation Therapy in Endocrine Disturbances. Gustav Bucky, M.D., New York, N. Y.
Discussion: Thomas L. Smyth, M.D., Allentown, Pa.

WEDNESDAY EVENING, JUNE 12, 1935

7 o'clock

Informal Round Table and Dinner Meeting

(The details to be announced later)

THURSDAY MORNING, JUNE 13, 1935

Rose Room

Business Session
9:00 o'clock

Scientific Session
9:30 o'clock

(1) The Treatment of Gonorrheal Arthritis by Means of Systemic and Additional Focal Heating. William Bierman, M.D., and Carl L. Levenson, M.D., New York, N.Y. (Slides will be shown.)
Discussion: William H. Schmidt, M.D., Philadelphia, Pa., William G. Curtis, M.D., Wollaston, Mass.

(2) The Place of Colonic Therapy in Treating the Mentally Ill. Harold K. Marshall, M.D., Gardner, Mass.
Discussion: James W. Wiltsie, M.D., Binghamton, N. Y., and Rolland A. Case, M.D., Cleveland, Ohio.

(3) A Scope of Diagnostic Roentgen Therapy in Neoplastic Diseases. J. Gershon-Cohen, M.D., Philadelphia, Pa.
Discussion: Joseph Scattergood, Jr., M.D., West Chester, Pa., George L. Schneider, M.D., Williamsport, Pa.

(4) Modern Therapy in Peripheral Nerve Pathology. William D. McFee, M.D., Boston, Mass.
Discussion: Arthur H. Ring, M.D., Arlington, Mass., and Robert E. Peck, M.D., New Haven, Conn.

THURSDAY AFTERNOON, JUNE 13, 1935

Rose Room
2 o'clock

(1) Passive Vascular Exercise in the Treatment of Peripheral Vascular Disease. Frank Hammond Krusen, M.D., Philadelphia, Pa.
Discussion: Frank H. Ewerhardt, M.D., St. Louis, Mo., and William J. Schatz, M.D., Allentown, Pa.

(2) Neoplastic Lesions of the Accessory Sinuses and Orbit, and Their Treatment by Combined Methods. William L. Clark, M.D., Philadelphia, Pa.
Discussion: Grant E. Ward, M.D., Baltimore, Md., Benedict F. Boland, M.D., Boston, Mass., and William H. Guillium, M.D., Asbury Park, N. J.

(3) Electrosurgical Procedures in Dermatology. Anthony D. Cipollaro, M.D., New York City.
Discussion: Austin W. Cheever, M.D., Boston, Mass.

(4) Recent Experience with Short Wave Therapy. William H. Schmidt, M.D., Philadelphia, Pa.
Discussion: John Severy Hibben, M.D., Pasadena, Cal., Frank Hammond Krusen, M.D., Philadelphia, Pa., and Robert C. Hughes, M.D., Paoli, Pa.

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES

CALENDAR OF BOSTON DISTRICT FOR THE WEEK BEGINNING MONDAY, JUNE 3, 1935

Monday, June 3—

12:30 P.M. Harvard Medical Alumni Association. Hotel Statler, Boston, Parlor D.

12:30 P.M. Tufts Medical School Alumni Association. University Club, Boston.

Tuesday, June 4—

12:30 P.M. Massachusetts Alumni of University of Maryland Medical School, Baltimore Medical College, and College of Physicians and Surgeons, Baltimore, University Club, Boston.

2 P.M. Massachusetts Medico-Legal Society. Hotel Statler, Boston.

†2:30-4 P.M. Ward Visit, Massachusetts Eye and Ear Infirmary.

Thursday, June 6—

*12 M. Clinico-Pathological Conference. Massachusetts General Hospital.

†12 M. Clinico-Pathological Conference. Children's Hospital.

Saturday, June 8—

*10-12. Staff rounds at the Peter Bent Brigham Hospital. Open to practicing physicians.

*Open to the medical profession.
†Open to Fellows of the Massachusetts Medical Society.

June 3—Harvard Medical Alumni Association will meet in Parlor D, Hotel Statler, Boston, at 12:30 P.M.

June 3—Tufts Medical School Alumni Association will meet in the President's Room at the University Club, Boston, at 12:30 P.M.

June 4—Massachusetts Medico-Legal Society. See page 1065.

June 4—Massachusetts Alumni of University of Maryland Medical School, Baltimore Medical College, and College of Physicians and Surgeons, Baltimore. See page 1066.

June 10—American-Canadian Medical Golfers Play at Atlantic City. For details write Bill Burns, Executive Secretary, 4421 Woodward Avenue, Detroit.

June 10 and 11—American Radium Society. See page 1066.

June 10 and 11—American Proctologic Society will meet at the Marlborough-Blenheim, Atlantic City. For information address Frank G. Runyeon, 1361 Perkiomen Avenue, Reading, Pa.

June 10 and 11—The Certified Milk Producers Association of America will meet in Atlantic City, N. J. Information may be obtained on application to Dr. Harris Monk, 360 Park Place, Brooklyn, New York.

June 11—American Heart Association. The Eleventh Scientific Session will be held from 9:30 A.M. to 5:30 P.M., at the Hotel Claridge, Atlantic City, N. J. The program will be devoted to various subjects on cardiovascular disease. Gertrude P. Wood, Office Secretary, 50 West 50th Street, New York, N. Y.

June 11—American Neisserian Society will meet at the Hotel Claridge, Atlantic City, New Jersey.

June 12 and 13—Academy of Physical Medicine, Annual Meeting. See page 1066.

June 17-19—The Medical Library Association will meet in Rochester, New York. For information address Miss Frances N. A. Whitman, Librarian, Harvard University Schools of Medicine and Public Health, Boston, Mass.

June 17 to 21—Convention of the Catholic Hospital Association will be held at Creighton University, Omaha, Nebraska. For information address the Most Reverend Joseph Francis Rummel, D.D., Bishop of Omaha.

June 24-28—American Urological Association and Western Branch Society, American Urological Association, will meet at the Palace Hotel, San Francisco, California. For details write Dr. Charles P. Mathé, 450 Sutter Street, San Francisco, California.

June 27-29 inc.—British National Association for the Prevention of Tuberculosis will be held at Southport, England. Persons desiring further information should write to Miss F. Stickland, Secretary of the Association at Tavistock House North, Tavistock Square, London, W. C. I., England.

July 1-23—University of Freiburg i. Br. will hold a vacation course of the medical faculty. For information address Akademische Auslandsstelle der Universität Freiburg i. Br., Schwimmbadstrasse 8, Germany.

July 22-27—Seventh International Congress on Industrial Accidents and Diseases, Brussels, Belgium. The American Committee of the Congress is under the chairmanship of Dr. Fred H. Albee, New York, for the Section on Accidents, and that of Dr. Emery R. Hayhurst, Columbus, Ohio, for Industrial Diseases. The American delegation to the Congress will sail from New York on July 8 and visit London, Amsterdam, The Hague and Paris, and, optionally, Budapest. Physicians interested in the Congress or in the medical tour in conjunction with it, may address the Secretary, Dr. Richard Kovacs, 1100 Park Avenue, New York City.

October 7-10—American Public Health Association will meet in Milwaukee, Wisconsin. For information address the American Public Health Association, 50 West 50th Street, New York City.

October 21-November 2—1935 Graduate Fortnight of the New York Academy of Medicine. See page 898, issue of May 9.

October 28 - November 1—The Twenty-Fifth Clinical Congress of the American College of Surgeons. See page 1065.

BOOK REVIEWS

CORRECTION

In the Book Review "Definite Diagnosis in General Practice" which appeared on page 962, issue of May 16, 1935, third paragraph, twenty-first line, the word "hypometabolism" appeared. The correct word should have been "hypermetabolism", so that the sentence will read "Under hypometabolism is listed only colloid goitre with no mention of myxedema; on the other hand hypermetabolism includes adenomatous and exophthalmic goitre and no mention is made of the leukemias or cardiac failure."

The 1934 Year Book of Radiology. Diagnosis edited by Charles A. Waters. Therapeutics edited by Ira I. Kaplan. 512 pp. Chicago: The Year Book Publishers, Inc. $4.50.

This the third year book of Radiology is again an adequate and valuable yearly abstract of Radiological Diagnosis and Radiotherapeutics as these subjects appear in various foreign and American journals. The volume is composed of 512 pages, properly indexed and copiously illustrated. The illustrations reduce the reading matter so that one is surprised to find it possible to read the selected abstracts of all that the authors consider important in Radiology during 1934 within two short evenings. This edition is less impressive than the previous editions, and the authors attribute this reduction in contents to political and economic conditions.

The Care of the Aged, the Dying and the Dead. Alfred Worcester. 77 pp. Springfield and Baltimore: Charles C Thomas. $1.00.

Probably Alfred Worcester better than almost any man in New England could manage three lectures on the last of life and on death itself. Steeped as he is in the humanities; in the philosophy and art of medicine during a long activity he speaks with that authority, that kindly persuasion that comes only from many and varied experiences at the bedside and in the family. There is no question but that this little book will be read not only by students, to whom it must appeal, but by many men of many types.

Synopsis of Genito-Urinary Diseases. Austin I. Dodson. 275 pp. 111 illustrations. St. Louis: The C. V. Mosby Company. $3.00.

This book of 275 pages is a synopsis of genito-urinary diseases. It should be a helpful guide to the understanding of basic principles of urology. In this respect the medical student may find it of some aid. However it is much too abbreviated for use as a "Handy Reference" to the average physician in practice.

The book is divided into fourteen chapters. Subjects such as urologic diagnosis, instruments, renal tumors, and renal stones are very briefly touched.

The cost of the book ($3.00) is a bit excessive.